THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 83. NEW YORK, SATURDAY, AUGUST 29, 1903. No. 9.

ORIGINAL ARTICLES.

EXTIRPATION OF THE URINARY BLADDER.

BY FRANK HARTLEY, M.D.,
OF NEW YORK;
ATTENDING SURGEON, NEW YORK HOSPITAL.

THIS has been necessitated by (1) malignant growths, involving the organ primarily or secondarily; (2) tuberculosis; (3) exstrophy; (4) uretero-vaginal fistulæ following extirpation of the uterus (a few instances) (Harnleiter-Scheiden fistulæ, *Schweitzer Correspondenz,* No. 4, 1901); (5) fibroids of the uterus (one instance) (*Am. Gyn. & Obstet. Journal,* Morten XVI, 1900).

Malignant tumors which have required complete removal of the bladder have numbered, so far as I am aware, 23. Eleven cases were performed with intestinal implantation of the ureters (Maydl). There were six deaths, as follows: two from shock, one from pyelo-nephritis on the sixteenth day—failure of implantation, one from uremia on the fifth day, one from failure of implantation and death from sepsis and uremia—fourteenth day, one from pyelo-nephritis antedating the operation.

Seven operations were performed with vaginal implantation of the ureters. There were two deaths, one from collapse twenty hours after operation; the other from septic peritonitis on the ninth day. Two operations were performed with urethral implantation of the ureters. There were two deaths, one from shock, the other from uremia. Two operations were performed with skin implantations of the ureters (abdominal wall). There was one death from shock. One operation was performed with one intestinal and one skin implantation of the ureter from which the patient recovered (Dr. G. Woolsey).

The recoveries were 12 out of 23 cases, or 52.17 per cent. One patient lived eight years and nine months; one lived three and a half months and died from an unknown cause; one lived four months and died from pyelonephritis; one lived seven months; one three years and six months; one three years, and one lived two years. These last four were lost sight of. Five patients died during the operation, but no subsequent account is given of them.

The deaths were 11 out of 23 cases, or 47.83 per cent. Among the causes of death, uremia figures twice; shock, five times; failure of union of ureters with the intestine, sepsis and uremia, twice; pyelonephritis antedating operations, once; septic peritonitis, once. In comparing these cases with those in which a part of the bladder has been removed and one or both ureters so involved as to require their implantation into other portions of the reconstructed bladder I can find 12 cases of the latter condition with 7 deaths, or 58.33 per cent., and 5 recoveries, or 41.67 per cent. Of the 5 recoveries, 3 had recurrences in 3, 5 and in 14 months. In one case the patient was free from recurrence at three months from the time of the operation. In the remaining case, death occurred two months after operation from croupous pneumonia (*Archiv für klin. Chir.,* XXII).

Of the 7 deaths, 3 died of collapse following operation and 4 died a few days after operation. In 3 of the latter, the ureters were dilated and the patients died of collapse and syncope. In the fourth case death was due to sepsis following phlegmon of the pelvic connective tissue. Hence, when the ureters are implanted elsewhere than into the bladder and the bladder is removed, the recoveries are 52 per cent., and when the ureters are implanted into the reconstructed bladder the recoveries are 41.67 per cent. This difference in favor of the complete cystectomy seems due to two causes: (1) Vaginal implantations of the ureters where the recoveries have been the greatest in number. (2) The non-involvement of the ureters by the malignant process and the absence of secondary inflammatory process in the ureters.

The very best results as to the freedom from recurrence are seen in the cases where the bladder is involved secondarily to an adjacent organ (uterus) and the ureters have been implanted into the vagina. In these cases the recoveries have been 71.5 per cent., the mortality 28.5 per cent.

The total extirpation of the bladder with the implantation of the ureters elsewhere than in the vagina gives 43.75 per cent. of recoveries and 56.25 per cent. mortality. These results are quite as good as the partial extirpation of the bladder with implantation into the reconstructed viscus, viz.: Recoveries 41.67 per cent.; mortality 58.33 per cent. The so-called cures in complete extirpation make a better showing than in the partial operation; whereas in the former several cases are reported as free from recurrence at four, seven and ten months, two years and eight and three-quarter years, in the latter of 5 cases recovering from the operation recurrences took place at three, five and fourteen months, respectively, in 3 cases. In one case death took place from pneumonia at two months. One case was free from from recurrence at four months.

It follows, then, that if the ureters and the bladder are involved, the complete extirpation of both and the implantation of the ureters into the vagina gives the best results both as to recovery and freedom from recurrence. This method, however, gives the patient no control over the urine and requires the constant use of the cathe-

ter under the best conditions. If the patient be a male, I believe complete extirpation of the bladder is the proper procedure; but whether we should implant the ureters into the urethra or the skin and wear a urinal, or should implant them into the intestine with rectal continence is still a question not settled.

So far as cases go, the results of intestinal implantation give 6 deaths in 11 cases—54 per cent. mortality—in which 2 died of shock, 1 of uremia on fifth day, 1 of failure of anastomosis and sepsis, 2 of pyelonephritis antedating operation. The results of the urethral and the cutaneous implantations give 3 deaths in 5 cases—60 per cent. mortality—in which 2 died of shock and 1 of uremia.

The choice for the method of dealing with the ureters in the male offers but little advantage one over the other. What is offered seems to be in favor of the urethral or cutaneous implantations, since the deaths were due in large measure to avoidable causes.

The second cause for extirpation of the bladder has been tuberculosis of that organ. Tuberculous ulcers of the bladder have been greatly benefited and some have been cured by suprapubic drainage. Such cases have been reported by Curtis (*Annales of Surgery*, 1895), Powers (*Annals of Surgery*, 1902) and Cheyne (*Lancet*, June and Oct., 1895). By hygiene and climatic treatment other ulcerations have been reported as healed by Bolton Bangs (*Annals of Surgery*, Oct., 1895), and by Gordon (*Dublin Journal*, May, 1899). In other cases of ulcerations of this variety excision or destruction of the ulcer has proved successful (Strauss, *Wiener medicinische Wochenschrift*, No. 51). In another class of cases in which the process is extensive, extirpation of the bladder has been resorted to, as a cure, by Martin (*Amer. Gyn. and Obstet. Jour.*, 1900, xvi, pp. 395-429); by Carl Beck (*Annals of Surgery*, 1899, p. 186), and by Trendelenburg (*Verh. den D. G. für Chir.*, 1895). In one case, the mucous membrane of the bladder, together with the ulcers has been removed and has been reported as curative (Delagénière, *Bulletin et Mem. de la Societé de Chir.*, 1895, p. 251).

All of these methods have had their successes. In no one method can the importance of hygienic and climatic treatment be neglected. The case I wish to report is one which required more than local treatment and rest by drainage. It was one which in my judgment could not be cured without a cystectomy. This history is as follows: Mary T., admitted to New York Hospital on April 19, 1902. Discharged June 9, 1902; clerk, U. S.; age, eighteen years. Previous history revealed no personal history of tuberculosis, but two uncles died of consumption. She had measles when a child, and one year ago had pleurisy and pneumonia. No venereal history. Present illness began three years ago when frequent micturition and burning pain in the bladder occurred. Three years ago a vesicovaginal fistula was made. This gave some relief, but was very annoying. Two years ago she had this fistula closed but the old symptoms, frequent micturition and burning pain gradually returned so that within six months her condition was unbearable. One year ago a suprapubic cystotomy was performed, and with this drainage and local treatment she was again relieved in part, but not entirely. After six months of drainage she again submitted to an operation, closing the suprapubic wound. As soon as this was closed her former frequent micturition returned. She has at present constant burning pain, frequent micturition and at times slightly bloody urine. There is constant pain and increased sensitiveness over the external genitals and the bladder. The external genitals are not observably congested. There are two bed-sores upon the buttocks from the constant contact with the urine. Her general condition seems good.

The physical examination of the thorax and abdomen is negative. The examination per rectum reveals nothing but an excessively sensitive bladder. A cystoscopic examination reveals a chronic cystitis and ulcerations upon the base and posterior wall of the bladder. The urinalysis shows the urine to be cloudy, alkaline, yellow, 1.018, albuminous; no sugar, mucus, leucocytes or tubercle bacilli. Diagnosis was then made of tuberculous ulceration in the bladder. Since the ulcerations involved the base and posterior wall of the bladder and were not seen at the urethral orifices this tuberculous process was probably of vesical origin (at least not renal). An exploratory operation was agreed upon for the purpose of excising the ulcers, or dissecting away the mucous membrane, or, as a last resort, the extirpation of the bladder. The patient readily agreed to this suggestion.

The operation was performed April 28, 1902. A vertical incision, four inches in length, was made, extending from the lima alba to the peritoneum. The cavity of Retzius was entered and the peritoneum was raised from the abdominal wall and from the fundus of the bladder. A generous incision was then made through the fundus of the bladder and its interior inspected. The base and greater portion of the posterior wall was seen to be covered with small ulcerations, extending into and through the mucous membrane. Some areas were devoid of mucous membrane and the bases of the ulcerations were covered with dirty-grayish sloughs. Beneath the bladder, at the base near the left ureters two or three small glands were felt through the bladder wall. Beneath the ulcerations, upon the posterior wall of the bladder, the tissues are much thickened and did not glide upon one another. The mucous membrane about the urethral orifices seemed swollen but healthy and unbroken. It did not seem possible to remove the ulcerations without perforating the bladder wall, nor did it seem possible to excise the base of the bladder and leave the ureters. The only possible outcome appeared to be to anastomose the ureters with the rectum or vagina after the complete removal of the blad-

der. As the ureteral orifices seemed healthy, and the disease could not be thoroughly removed without sacrificing over two-thirds of the bladder, and that at the base and posterior surfaces. I decided to remove all of the bladder except that immediately surrounding the ureteral orifices (a circle of three-fourths of an inch in diameter). This being the case I could unite the bladder wall and mucous membrane surrounding the ureters to one another and then implant them by the Maydl method, or I could implant them separately by Pozzi's method. I preferred the intestinal to the vaginal implantation, because of the favorable results following this method in extrophy of the bladder, both as concerns the infection of the kidney and the tolerance of the urine by the rectum. Sufficiently prolonged and careful treatment had been carried out in this city in three of our hospitals and under the best observers, so that no hesitancy was felt in the necessity of this step.

Acting upon this decision, the peritoneum was carefully stripped from the fundus and the posterior surface of the bladder until the ureters were recognized and the base was exposed to view. This was accomplished with surprisingly little hemorrhage. Each ureter was now divested of its connective tissue attachments in the broad ligaments, care being taken not to interfere with its nutrition by stripping the ureters too closely. When they were dissected so as to move freely, the bladder was removed, leaving each ureter surrounded by an irregularly shaped piece of bladder wall three-fourths by one-half inch. These two pieces of bladder wall were trimmed and sutured together preparatory to suturing them into the sigmoid flexure (Maydl's method). The peritoneum was now opened by a vertical incision, passing from the fundus of uterus upward two inches. The sigmoid flexure was drawn through it sufficiently to allow its being clamped above and below the point of implantation.

A vertical incision was now made in the intestine and the ureters with their surrounding (1 cm.) of bladder wall were implanted. The mucous membrane of the bladder and that of the intestine was sutured by interrupted silk sutures. The serosa of the intestines was sutured to the connective tissues and muscular coat of the bladder by another row of silk sutures. This union of the sigmoid and ureters would undoubtedly be pressed upon by any enlargement of the uterus and to avoid such pressure a transverse incision was made upon each side at the lower angle of the vertical one in the peritoneum and through these slits which passed through the peritoneum of the broad ligament the ureters were displaced backward and outward allowing the uterus to appear between them. This was accomplished without difficulty. The vertical and lateral peritoneal incisions were now closed. At this time the glands, which were felt to be near the left ureter when examining the interior of the bladder with the finger, and which we carefully avoided when loosening the left ureter in the broad ligament were extirpated. The abdominal wall was sutured and a small strip of rubber drainage placed in the cavity of Retzius. The wound was dressed aseptically. A No. 30 catheter was inserted into the rectum.

April 19. Temperature, 99° F.; respiration, 24; pulse, 100. April 20. Slept half of the night. April 21. Pain in the rectum; urinalysis, yellow, cloudy, alkaline, 1.018; albumin; no sugar; mucus; leucocytes. April 28. Patient complained of much pain in the wound. Little urine has been caught by the tube. She is restless, with a pulse of 136, and a temperature of 97° F. The drainage in the cavity of Retzius was removed and as nothing was seen, a posterior vaginal section was made. No leakage had taken place either into the peritoneal cavity or into properitoneal space. Urinalysis, smoky, yellow, turbid, alkaline 1.008; albumin, a trace.

May 1. Rectal tube removed. Urine passes involuntarily, caught in napkin; rectum irrigated regularly, three times per day. May 2. Patient sleeps well; holds urine about two hours; rectal irrigation of six hours. May 6. Sutures removed. May 10. Same treatment. Urinalysis, yellow, cloudy, alkaline, 1.010; albumin, a trace; no sugar, mucus; detritus microscopically negative.

May 15. Retained 18 oz. urine
1 oz. urine
18 oz. urine
} Three passages during the day.

May 17. Retained 16 oz. urine
1 oz. urine
16 oz. urine
} Three passages during the day.

May 19. Retained 18 oz.urine
13 oz. urine
} Two passages during the day.

May 30. Urine is made three times daily and once or twice at night.

June 6. Discharged cured.

Specimen.—Represented by a piece 9x4 cm.; deeper layers of the bladder wall apparently normal. Mucous membrane shows many ulcerated areas, with a marked chronic cystitis. The glands removed show tuberculous involvement. Diagnosis, chronic cystitis; tuberculous ulceration.

January, 1903.—This patient presented herself at the New York Hospital, Jan. 10. She is in good health, is employed all day as a clerk. Makes water three to four times during day and once or twice at night. Urine collected from the rectum shows it to be alkaline, cloudy; 1.010; a trace of albumin; no sugar; mucus; detritus. Microscopical examination is negative.

The third condition demanding at times a removal of the bladder is exstrophy of the bladder. My views upon this subject have been fully enunciated in the *Annals of Surgery*, July, 1901. At that time, among other cases, I related the history of a patient three years of age, operated upon on Feb. 22, 1900, for this malformation, in whom the bladder was removed and the ureters

implanted in the upper portion of the rectum. On March 27, 1901, the patient was in good health, with no renal, or rectal irritation or tenderness. The urine was passed every four hours. At night once unless the child neglected it before going to bed. On June 30, 1901, this patient died in a hospital in Philadelphia. The cause of death is stated to be "enteritis." I have not been able to obtain more knowledge of the case.

At the same time I gave the history of another patient operated upon by me in 1894 at the Roosevelt Hospital by the method of superimposed skin flaps, and again in 1899, at the New York Hospital. The second operation for closure of the urethra by Küster method failed. In consequence of this failure the patient was advised to return to the hospital within six months for a radical operation consisting in either the removal of the bladder with implantation of the ureters by the Maydl or Pozzi method or by rectovesical anastomosis of Frank. For this radical procedure he entered the New York Hospital Nov. 5, 1902. Patient is now eighteen years of age.

Operation occurred Nov. 6, 1902. A median incision in the abdominal wall was made which exposed the peritoneum above the bladder. Enucleation of the bladder which was difficult on account of the vascularity and the old scar tissue formed seven years ago. The bladder was removed, except a piece of the trigone 1½ by ½ inch, including the orifices of the ureters. The peritoneum was now incised and the suture of the sigmoid and the bladder wall containing the ureters was made with two rows of silk sutures, as in the previous case.

Abdominal wall sutured; prevesical space drained with gauze; rectal tube inserted; urine collected during day, 44 ounces. Nov. 7, dressed, 32 ounces. Nov. 8, patient complained of epigastric and lumbar pain on right side. Bowel irrigated. Urotropine grs. x q. i. d. Urinalysis brown, 1.012, alkaline, considerable albumin; phosphatic crystals; mucus, 53 ounces; Nov. 9, urine, 36 ounces; Nov. 12, 26 ounces; Nov. 13, 48 ounces; Nov. 14, 37 ounces; Nov. 15, 35 ounces; Nov. 16, 64 ounces; Nov. 26, discharged, cured.

For exstrophy of the bladder, the extirpation of the viscus with the implantation of the ureters into the sigmoid flexure or the rectum has been performed 46 times with a mortality of 15 per cent., 6.5 per cent. of this represents infection of the ureters and kidneys occurring immediately after or at a remote period from the operation. In how many cases the infection of the ureters and kidney has antedated the operation cannot well be obtained owing to the failure of the proper urinary examinations. 8.5 per cent. represents shock, a condition which may be avoided by improved technic and a better selection of cases.

Of these 46 cases, 1 case was seen four months after operation; 15 cases were seen one year after operation; 13 cases were seen two years after operation; 9 cases were seen three years after operation; 1 case was seen seven years after operation.

The best methods of treating this condition, provided the construction of a continent bladder is impossible, seem to be (1) cystectomy with the intestinal anastomosis of Maydl or Pozzi. (2) Vesicorectal anastomosis (Frank). (3) Extirpation of the bladder and urethral implantation of the ureters (Sonnenberg). (4) Extirpation of the bladder and vaginal implantation of the ureters (Pawlik).

The remaining conditions for which extirpation of the bladder has been performed are rare and have not come under my observation. Were such cases presented it is to be observed that the intestinal anastomosis presupposes intact ureters and gives rectal continence, whereas the vaginal implantation gives slightly better results, but without urinary continence and requires the use of a urinal.

52 West Fiftieth Street.

THE PROGNOSIS OF TABES: AN ANALYSIS OF 140 CASES OF LOCOMOTOR ATAXIA.*

BY JOSEPH COLLINS, M.D.,

OF NEW YORK;

PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL; VISITING PHYSICIAN TO THE CITY HOSPITAL; CONSULTING NEUROLOGIST TO THE HOSPITAL FOR RUPTURED AND CRIPPLED.

WHEN discussing the symptomatology of tabes I called attention to the variability of its clinical manifestations. The course of the disease in different individuals is one of the most remarkable things about it. One patient will have it for ten years and be made aware of it only by lancinating pains, impaired sexual vigor and occasional nocturnal incontinence of urine. Another develops hypotonia and ataxia so rapidly that he becomes bedridden a few months after the onset of subjective symptoms. The symptoms of tabes are customarily said to display themselves in three stages which constitute the course of the disease: (1) The preataxic stage; (2) the ataxic stage; (3) the profoundly incoordinate and hypotonic stage, often spoken of as the paralytic stage, but in reality there is no actual paralysis save exceptionally and then it is to be considered a complication.

The duration of these three stages or periods can only be approximated, it varies so enormously in different patients. We have no means of estimating how long the disease, as evidenced by unequivocal signs, has been in existence when the patient comes under observation. For instance, in the following case the disease may have been present for many years. A woman, thirty-eight years old, who married at twenty-one years of age, but who had never borne children said that for four years before coming to see me she had rheumatism from the toes to the waist line. It was never very severe but sometimes for a few days at a time it would require medicine from her

* Part I of this series was published in the MEDICAL NEWS, Jan. 3, 1903; Part II March 7 and 14, 1903; Part III June 13 and 20, 1903.

physician. The symptom for which she consulted me was a "sore, sensitive sensation" in the left leg and a numbness of the legs which was gradually crawling up to the thighs. Examination showed Argyll-Robertson pupils, loss of knee and ankle-jerks, hypotonia, hypesthesia and hypalgesia of the legs, especially of the outer surfaces. There was no complaint of incontinence of urine, girdle sensation, paresthesia, disturbance of gait or station, or diplopia. The diagnosis of tabes in such a case can be made with as much positiveness as if ataxia were one of the symptoms.

Babinski (*Revue Neurologique*, Jan. 15, 1902, p. 59) has related the case of a woman, sixty-five years old, who consulted him for some trivial affection and who presented inequality of the pupils, Argyll-Robertson phenomenon, and absence of the Achilles-jerks, objective symptoms which led him to make the diagnosis of tabes. On inquiry he satisfied himself that some of these symptoms had dated from the patient's twentieth year. In other words, the disease had existed in a benign way for forty years.

To date the beginning of the disease from the onset of symptoms noted by the patient would often give us very unreliable information on this point. I have the histories of a number of patients in which the diagnosis of tabes is certain, although there are no symptoms which the patients consider to be those of tabes. For instance, a man, fifty-five years old, came to see me on October 22, 1902, and said that the morning before on arising he found that he could not open the right eye and when the lid was lifted with the finger that he saw double. Examination showed ptosis and paralysis of all the eye muscles save the superior oblique and external rectus, the pupil being widely dilated and unresponsive to light. Examination showed in addition to this exaggeration of the knee-jerks, normal ankle-jerks and tachycardia. December 28, 1902, all traces of the ptosis and ocular paralysis had entirely disappeared. In the meantime he had been having bichloride of mercury hypodermically, one-third of a grain every second day and iodide of potash, 90 grains a day. June 1, 1903, examination revealed Argyll-Robertson pupils; distinct Rombergism; sluggish ankle-jerks; left knee-jerk exaggerated, right diminished; distinct hypesthesia over both peroneal surfaces; incontinence of urine nocturnal and diurnal. Such association of symptoms leaves no doubt as to the diagnosis of the disease.

In contrast to these cases, I may refer to the following case to illustrate the rapidity with which the disease occasionally overwhelms the patient. Mrs. B., married, has borne three children and one miscarriage. There is no history or indication of syphilitic infection. She maintains that she was well and had been so on September, 1902, when she stepped on a banana skin and fell to the sidewalk striking the right leg. Apparently she was not injured for she got up and went along. That night the leg felt sore, but after having it rubbed with alcohol it felt better. The next day she went to work but felt nervous and "shaky." The following day she was so nervous and had so much pain in the leg that she had to leave off work. The pain which was in both legs, but more in the leg that was injured when she fell than in the other, increased for a few days and then went away. She then noticed that she could not walk steadily and this grew gradually worse until at Christmas time, *i.e.*, three months later she was so unsteady in her gait and uncertain in her step that she could not go out unattended. When I first saw her, six months after the onset of the symptoms, she had no complaint of any sort to make save of difficulty in standing and walking. The ataxia which she presented, both of station and locomotion, was very profound and she could walk only when aided by another person and could stand only when holding something. On attempting to go downstairs and frequently when walking through the room there was sudden giving way of the knees. The knee-, ankle- and elbow-jerks were absent, the plantar-jerk was present, not lively, and of the flexor type. The pupils were equal, of moderate size and unresponsive to light but quickly responsive to accommodation. There was no anesthesia or analgesia of any part of the body. She says that the prick of a pin is felt more distinctly over the upper part of the thorax than over the middle and lower, but in reality there was very little difference. There was no girdle sensation, diplopia, incontinence of urine, hypotonia or trophic manifestations. In other words, the case is distinctively an example of the motor type of tabes which I have already described (See Case 7, MEDICAL NEWS, March 14, 1903).

The length of time that elapsed between the first symptom of the disease and the appearance of ataxia in my 140 cases, was three years and five months. These figures may be very misleading. In the first place patients seen in the hospital for the first time a number of years after the beginning of the disease have very little idea when the disease really began or what period intervened between the first symptom of tabes and the ataxia. Then again a few cases like that last related in which ataxia is an early symptom makes the average duration of the preataxia stage appear much shorter than it usually is. I am inclined to believe that the preataxia stage of tabes in all cases save those of the motor type is oftener above five years than below.

The average duration of the disease is difficult for me to estimate as I have been in the way of seeing many cases of the disease only during the past ten years. Of the 140 cases that I am here analyzing, 11 have died and the average duration of the disease in these cases was thirteen years. This does not actually show the duration, for four of these cases died of intercurrent diseases. One from acute Bright's disease, two from tuberculosis, one from probable rupture of an aneurism and one from suppurative peritonitis from rupture of an abscess.

The matter that interests us as physicians, and

our patients with locomotor ataxia, is, What can we tell them from a consideration of the symptoms and signs of their disease about their future. Can the wage-earner be assured that he will be able to provide for his own needs and those of his family for a certain length of time and if so, how long will it probably be. Shall the man of affairs be counseled to continue the direction of his business or shall he, when he learns that he is suffering from an incurable disease, relinquish his work and prepare for translation? In brief, what are we able to tell a person after we have diagnosticated tabes of what the future has in store for him. He is no longer interested in the etiology of the disease and even though he might be, what we have to tell him on that score only adds to his misery.

The factors that influence the prognosis are: (1) The clinical type of the disease; (2) what may be called the anatomical type of the disease, *i.e.*, whether of the lumbar or lumbo-dorsal cord (the customary location) or of the cervical or cervico-bulbar region; (3) sex and age; (4) the individual, his occupation and the treatment.

Next to these cases the prognosis is most favorable in the cases that I have referred to as the motor type and this is especially true since the introduction of the Fraenkel system of exercises and the more general utilization of orthopedic apparatus. The outlook in this class of cases is best when symptoms of involvement of the sympathetic nervous system are not profound. On the other hand, it is unfavorable when severe disturbance of the urogenital system and trophic symptoms are early and conspicuous manifestations. It is in cases of this sort that certain health resorts or certain therapeutic measures get a reputation for "curing" tabes which is wholly undeserved. I have notes of a patient of this sort who is convinced that the treatment of Lamalou is responsible for the very considerable recovery which he has made. It does not alter his opinion of the efficacy of the treatment of Lamalou for tabetics to know that I have notes of a dozen patients who have not been particularly benefited by repeated visits to this favorite French resort. I have seen patients having this same type of the disease benefited from the combined effect of wearing a pair of shoes for which he paid $3,000 and the emotional exaltation which he got from coming in contact with an individual who had the assurance to ask that amount for them, and I have seen them get entirely well functionally under a treatment of rest and graduated exercises. As an example of this I may refer to the history of a young lady quoted in the article on Symptomatology. When she first came under treatment she was able to walk only when steadied and supported on either side, but within two years she had returned to her work on the stage, which necessitated dancing. She is now apparently quite well, the only symptoms being incontinence of urine and loss of sexual desire. The signs of tabes are still unequivocal.

The clinical type of tabes which in my experience has the least favorable prognosis is that in which disturbance of the sympathetic nervous system predominates; vesical symptoms, crises, trophic manifestations in the soft and hard tissues. Cases in which the bladder and rectum are involved early and severely, often pursue a rapid course little influenced by treatment. Moreover incompetency of the bladder often opens the road to complications such as cystitis and pyelitis and their consequences which not only add to the patient's suffering and depreciate his vitality, but may directly or indirectly cause death. Although death rarely occurs during tabetic crises of one kind or another, they gloomify the prognosis through the exhaustion which they produce and by reason of the fact that patients who suffer from them are liable to become victims of morphine. I have pointed out in another article ("Tabes and Progressive Muscular Atrophy," *Journal of Nervous and Mental Disease*, June, 1903) that tabes when associated with profound atrophy of the muscles of either neural or spinal origin is apt to be atypical in its clinical delineation and to run rather a rapid course. I have not noted that the occurrence of the milder forms of atrophy influences the prognosis. They may do so by incapacitating the patient from getting about and by impairing the vital resistance of his tissue to infections such as tuberculosis, pneumonia and erysipelas. The same statement holds true, I think, for the arthropathies.

In 1881, Benedikt, of Vienna, in writing of the prognosis of tabes, made the statement that the clinical form of the disease in which the prognosis was far more favorable than in any other was tabes with atrophy of the optic nerve. A few years later he maintained that it was a rule without exception that the motor symptoms of tabes recede as optic atrophy progresses. Since that time a number of writers have published cases which, in a measure at least, substantiate his first statement. Dejerine (*Societe de Biologie*, June 22, 1889) particularly maintaining that it is rare to find a blind tabetic who presents the signs of the second stage of tabes, and that in the majority of cases the advent of blindness is coincident with an amelioration or cessation of pains. My experience is entirely at variance with these views and with one exception, possibly two, I have never seen the course of the disease modified in any way by the advent of blindness. So far as the appearance of ataxia in amaurotic tabetics is concerned, I have a patient under observation now, as he has been for the past seven years, who did not become ataxic until two years after blindness was complete. It must not be forgotten that ataxia is itself a late manifestation in a large proportion of cases, while optic atrophy is comparatively an early one. The disease exists for years in many cases and is to be diagnosticated from the symptoms and the signs long before ataxia sets in, and all clinicians seem to be agreed that if optic atrophy does not set in in the earlier years of the disease it is not likely to occur at all. If blindness occurs in a benign case of tabes it may

well be seen that the occurrence of blindness has an apparent ameliorating effect upon the disease, but that it has any real effect to alter its course I am unwilling to believe. This connection is a favorable one, to refer to some views emitted on the subject of tabes with blindness by Marie and Switalski at the International Medical Congress at Paris in 1900. They attempt to distinguish two varieties of tabes with blindness: (1) Tabes with papillary atrophy and (2) the papillary atrophy of tabetics. Under the first they classify patients who have all the phenomena of tabes, often to a very pronounced degree, with ataxia, Rombergism, and serious disturbances of nutrition. Under the second the clinical aspect is very different, the patients are well nourished, with the appearance of health and there exists no trophic trouble. The clinical symptoms of tabes, *i.e.*, the pains, the ataxia, and the vesical trouble show themselves to a very slight degree. From a nosological point of view they believe that we are probably not concerned with an essentially distinct morbid species in these two forms of tabetic blindness because the etiology of both is the same, viz., syphilis, but that there is a different localization of the same process, or perhaps even of a different process, at the basis of it. Although the wisdom of such an attempt at classification or subdivision is very doubtful, nevertheless we encounter cases which correspond with it. I do not recall whether there are any autopsies recorded upon the second class of cases mentioned by these writers. Unless there are, and the findings in the cord correspond to those of tabes, it may be considered questionable whether the form of disease described under (2) should be admitted under the heading of tabes at all.

I have encountered three such cases during the period that 153 cases have come under observation. The last patient that I saw is so typical of this variety that I shall quote it here. Mr. T., fifty-seven years old, an actor, had syphilis when about thirty years of age. For this disease he was treated for about one year with mercury and iodide of potassium. A few years after the syphilitic infection he had a very mild attack of iritis. Aside from this he remained well until he was forty-seven years old. He came home from the theater one night in his usual health, went to bed and to sleep. About 2 A. M. he was awakened with a boring sharp pain in the chest. This continued for several hours and then gradually passed away. After it ceased he had a sensation in the eyes as if they were dancing and when he tried to get up he felt giddy. As the result of all this and of the pain in the chest and in the epigastrium, which recurred every now and then, his nerves gave way and he had what he calls an attack of "nervous prostration" which lasted five weeks. During most of this time he was confined to bed. When he tried to stand his legs bent beneath him. No other details of this illness can be got save the trouble with his sight which began at this time. He says that everything that he looked at kept dancing before his eyes. From that time his sight began to fail progressively and continued until a year ago when he became entirely blind. His account of the way in which the vision failed is so characteristic of tabetic amaurosis that it deserves to be quoted. During the first few years of failing sight he says he could see objects very well, providing he stopped and looked at them directly ahead, but if he wished to take in many objects at a glance it was very difficult, they were blurred and indistinct. In other words, he had to have the object fairly ahead of him and to focus steadily upon it. Gradually his sight became so affected that things that he focused had the appearance of being seen through the large end of a telescope. The visual field got steadily smaller and smaller until it narrowed down to a pin-point aperture. During these eight years when he was losing his sight he says that he felt fairly well save that at times he had sharp darting pains throughout different parts of the body and at times a sensation in the right thigh as if it were asleep. He has also had at times difficulty in passing water, occasionally he has to wait some time before starting the stream and to press hard in order to empty the bladder but he considers that his bladder performs its function well. He has had at times a girdle sensation around the lower part of the abdomen. He is still fairly potent.

Examination shows practically no ataxia of locomotion or station, there being slight unsteadiness when he stands on the left foot. There is no ataxia of the upper extremities. There is slight diminished keenness of sensibility from below the spine of the scapulæ to about the eleventh dorsal vertebra and extending around the body. The tendon-jerks are all very lively, the plantar-jerks, the cremaster jerks and the abdominal jerks are normal. The pupils are large and unresponsive to light. There is complete primary atrophy of both optic nerves. The left iris shows some indication of previous inflammation. The left ear gives evidence of nerve deafness.

One may consider the disease process in this patient a variety of tabes or he may not. If he puts it in that category it is clearly a very atypical case and one is not justified in making deductions anent the prognosis of ordinary tabes from it or from any number of such cases.

It was only by careful questioning that any symptoms whatsoever were elicited, and taken by themselves the symptoms so elicited have little diagnostic significance. The physical signs would not justify the diagnosis of tabes. Nevertheless, this may be taken as a fairly good example of amaurotic tabes. The point that I wish to make here is that from a prognostic point of view it is quite a different disease from ordinary tabes.

The prognosis is worse in cases of brusque onset. Although in many such cases the symptoms ameliorate, often the disease has incapacitated the patient, and although in some instances there is considerable restitution of function, in the majority of cases the disease pursues a rapid course especially if associated with symptoms indicating

profound disorder of the sympathetic nervous system.

The prognosis is far better in those cases in which the disease is of slow and insidious onset, than in those in which it has developed abruptly. It is incontestable that the longer the onset of ataxia is delayed the less grave is the prognosis. It is my experience that as the disease conforms itself in the beginning so does it continue to do during its entire course. The disease seems to advance more rapidly in patients in which tabes developed within a comparatively short time, say ten years after a syphilitic infection, than when it develops much more tardily and the prognosis is distinctly worse in these cases. One reason for this is that exudative lesions of syphilis in the blood-vessels and viscera may not only lower the patient's vitality and recuperative capacity, but mediate intercurrent conditions such as apoplexy which causes the patient's death directly. The prognosis is much more unfavorable in high tabes, cervical and cervicobulbar tabes, than in the common variety. Why encroachment of the oblongata by the disease process should make the prognosis grave is readily apparent. It adds the terrors and dangers of bulbar palsy. Death is very rarely caused directly by tabes, but by some such accident as the pneumonia of swallowing, syncope and pharyngeal paralysis leading to asphyxia.

Early involvement of the nerve supply of the larynx is an unfavorable symptom. I have seen one case in which this complication, occurring comparatively early in the course of the disease, caused paralysis of the adductors of the vocal cords which necessitated immediate tracheotomy to cut short an attack of asphyxia which threatened the patient's life. Another patient in which the outlook was grave because of the sudden onset of the symptoms and early development of laryngeal symptoms, was Case XI, recorded in the MEDICAL NEWS, March 14, 1903.

The course of the disease seems to be more rapid in women than in men. Out of 20 cases of the disease in women, only one was benign. Although this is too small a number from which to draw conclusions, benign cases seem to be frequent in males. The most brusque and rapidly progressive cases that I have seen have been in women and especially in those in whom no history or indication of syphilis could be obtained.

The disease seems to advance more rapidly in young tabetics under thirty-five years of age than in those who develop the disease later in life. At least that has been so in the patients under my observation. Another fact that has been noted about these cases in comparatively young adults, is that the disease after reaching a certain stage, oftentimes incapacitates the patient, the progress seems to cease for a long time and under treatment restitution of certain functions is brought about.

The prognosis is worse in those whose occupation necessitates standing or fatiguing use of the legs. Anything that contributes to leg weariness tends to facilitate the rapidity of the course of the disease. This is one reason why we encounter such a disproportion of comparatively recent tabetics in our large public hospitals. Their social and hygienic environment, intemperate use of spirits, and the necessity for earning their daily bread, all combine to make the course of the disease more rapid.

The prognosis of tabes to-day differs from that of twenty-five years ago because the disease has apparently undergone clinical transformation. We no longer see the type of tabes delineated by Duchenne, Romberg, Charcot, Seguin or any of the clinicians of the previous generation and to which the name "Progressive Locomotor Ataxia" seemed so apt and so descriptive. The symptoms are less sévere, the course of the disease is less progressive and what may be called aberrant forms or forms "frustes" of the French writers are more common. I very rarely nowadays see in private or hospital practice, the very pronounced form of the disease which I saw ten or fifteen years ago. To be sure there are gathered together in almshouses and hospitals for incurables a few cases of this pronounced type.

What the explanation is of this change in the clinical delineation of tabes it is not easy to say, moreover, no one factor is entirely responsible for it. In the first place early and atypical tabes are recognized by the general practitioner and by the specialist so much more frequently to-day than they were even a few years ago, that this must, in a measure, account for the impression that many of us have received that the disease does not display itself as formerly. In the article on the symptomatology I called attention to the fact that objective symptoms of the disease are not infrequently present for years before the subjective symptoms. It naturally follows that if one encounters a number of these cases and has them under observation for a protracted time, and no very severe symptoms develop he becomes convinced that the disease is not the same as it used to be. On the other hand, it may well be that the treatment has had something to do with bringing about this condition. Although we are still in the lamentable position of having no specific for tabes and in fact, of having no medicament which we can say positively will alter the course of the disease, nevertheless we have learned empirically that conformation to a certain regime, mode of life, dietary, medical therapy, massage, hydrotherapy, climatotherapy and electrotherapy has not infrequently such influence upon the disease that the process seems to stop advancing while they are being employed.

The Germ of Rabies.—Dr. A. Negri, Golgi's assistant at Pavia, announced last March the discovery of the specific micro-organism of rabies. After further investigation he states that he has examined more than 100 dogs with natural or laboratory rabies, and has never failed to find the specific micro-organism in the nerve centers. On the other hand, he has never found it in other dogs.

THE TOXIC ACTIONS OF UROTROPIN: WITH REPORT OF A CASE OF HEMATURIA AND HEMOGLOBINURIA FOLLOWING A DOSE OF SEVEN AND ONE-HALF GRAINS.*

BY WARREN COLEMAN, M.D.,
OF NEW YORK;
PROFESSOR OF CLINICAL MEDICINE, CORNELL UNIVERSITY; ASSISTANT PHYSICIAN TO BELLEVUE HOSPITAL.

UROTROPIN is an unstable chemical compound formed by the action of formaldehyde on ammonia. It is readily decomposed, with the liberation of free formaldehyde, by feeble acids and even acid salts, as acid sodium phosphate of the urine. Other trade names are aminoform and cystogen.

Nicolaier first employed urotropin in 1894 as a diuretic and uric acid solvent. Later he recommended it as a urinary antiseptic. He began its administration in doses of 120 to 150 grains a day, and even gave as much as 150 grains *at one dose* without ill-effects. But larger experience taught him that unpleasant symptoms might result from daily doses of even 90 grains. He has never seen, however, any ill-effects from daily doses of less than 30 grains. As urotropin came into general use, toxic effects were occasionally observed after as small a dose as 15 grains a day and, in the case which I shall describe presently, after a single dose of seven and one-half grains.

When one considers the extent to which urotropin is administered, the limited number of cases reported in which its use has been attended by toxic effects confirms the general belief in its freedom from such effects. Yet the fact that it may prove toxic, perhaps from idiosyncrasy, must not be lost sight of. It is the purpose of this paper to call attention to such toxic actions as have been reported.

Individuals vary greatly in their susceptibility to urotropin, and Keyes states that the same patient may vary in susceptibility at different times. Children bear urotropin well, though somewhat smaller doses should be employed.

Urotropin is sweetish, with a somewhat bitter after-taste, but when well-diluted is practically tasteless. All who have used urotropin agree that it should be freely diluted for administration—that a dose of 7½ grains should be dissolved in at least half a pint of plain or carbonated water at ordinary temperature, and larger doses in proportion—or irritation is likely to occur. In view of the large quantity of water to be taken with it, urotropin should be administered when the stomach is empty, that is, before or not till two hours after meals. Nicolaier and Richardson give urotropin after meals, but the majority of writers advise that it be given "morning and evening," which means, I take it, on an empty stomach.

The physiological actions of urotropin have not yet been definitely worked out, as is evident from the conflicting statements found in the literature. As has been stated, Nicolaier first recommended urotropin as a diuretic and uric acid solvent. Later he found it to be a powerful urinary antiseptic. The only other action that has since been attributed to urotropin is its power of correcting phosphaturia, as stated by Casper.

Urotropin is quickly absorbed, since its elimination by the kidneys begins within ten minutes after administration. The duration of its presence in the urine depends upon the size of the last dose. Nicolaier, giving 7½ grains, found that it disappeared in thirteen hours; with 22 grains, in twenty-seven hours; and he states that even after 90 grains per day, it soon disappears. Cammidge, giving 30 grains a day to a healthy adult, found urotropin in the urine for twenty-six hours. Nicolaier thinks Casper's observation that urotropin persisted in the urine for fourteen days after the last dose is probably erroneous.

It is believed by most investigators that urotropin circulates in the blood in its own form. Casper found free formaldehyde in the blood of a rabbit to which urotropin had been given subcutaneously, but not in the blood of patients taking the drug. Loebisch and Linoissier claim to have detected formaldehyde in the blood after the administration of urotropin. The fact that urotropin is excreted unchanged by the kidneys is evidence against its decomposition in the blood under ordinary circumstances. Perhaps is those cases in which formaldehyde has been found in the blood, it has been liberated under the action of the acid gastric juice and absorbed as such.

The fate of urotropin after it enters the urine is still a subject of contention. Formaldehyde cannot be demonstrated in the urine of all patients taking urotropin, yet clinical experience proves that some antiseptic body is present.

Part of the urotropin excreted by the kidneys is undoubtedly partially or completely decomposed in the urine, if it is acid in reaction, and it is probable that this decomposition occurs, at least in part, in the renal tubules. From the clinical evidence of its action in cases of cystitis with ammoniacal urine, and the well-founded assumption that urotropin is not decomposed in alkaline solutions at the body temperature, the extent of this decomposition before the urine reaches the bladder must be considerable. Cammidge failed to find formaldehyde in the urine of a healthy adult taking 30 grains of urotropin per day, and concluded that the exact chemical nature of the body which acts as a urinary antiseptic is unknown. He believes, however, that acid urines produce partial decomposition of urotropin in the kidneys at which time the antiseptic element is formed, and emphasizes the fact that such decomposition takes place only in the presence of *acid urine*. Hence drugs which diminish the acidity of the urine should not be given in conjunction with urotropin.

Others, however, notably Nicolaier, Loebisch and Casper, contend that free formaldehyde is split off in the urine. Citron, while admitting this, thinks that the formaldehyde immediately

*Read before the Section on General Medicine, New York Academy of Medicine, April 21, 1903.

re-combines with some substance in the urine, probably the sodium salts, and does not exist there as such. Nicolaier has found by *in vitro* experiments that formaldehyde splits off from urotropin in the presence of uric acid, and believes that formaldehyde is liberated in the body in this manner.

We may sum up these opinions as follows: Urotropin is always found in the urine of patients taking it; formaldehyde is found in some cases; and an antiseptic action is almost always manifest.

Whatever may be the manner of its action, urotropin is the most potent and at the same time the most reliable *urinary antiseptic* we possess. Urotropin, however, is not suitable in all cases where urinary antisepsis is desired. Keyes considers that the drug is distinctly irritating to the urinary passages and that in straightforward cases of chronic posterior urethritis and acute cystitis it may do more harm than good. This opinion is based on extensive clinical experience, but is not shared by many who are equally well qualified to speak. Hahn says urotropin is practically useless in bladder cases when the urine is acid in reaction.

The *diuretic action* of urotropin, though marked at times, is not constant. How urotropin acts as a diuretic is not known, but as it rather lowers blood pressure in large doses, it is probable that it acts through local stimulation of the kidney cells.

The action of urotropin as a *solvent of uric acid* and even of uratic calculi has been highly praised, but it has not fulfilled the expectations of its advocates, as the experiments of Casper and Mendelsohn have shown.

Casper claims that urotropin relieves *phosphaturia* in a remarkable manner.

As the literature on the therapeutic actions of urotropin is rather full no further space need be given to it, and we may turn our attention to its toxic actions, using the term to include all untoward effects.

The toxic actions of urotropin, reported to date, as far as I have been able to find after a thorough search of the literature, include:

a.—Minor Toxic Actions, which may be grouped under a single heading.

1. *Irritation of the stomach*, as shown by impairment of digestion and slight malnutrition, has been observed with comparative frequency. Dr. James R. Hayden tells me he has seen it several times. Richardson reports one case of nausea and vomiting, which he attributed to the fact that, contrary to his custom, the urotropin was administered on an empty stomach.

2. *Diarrhea and Abdominal Pain.*—Diarrhea has followed the administration of urotropin in a few cases, accompanied in one instance by abdominal pain. Hematuria also occurred in Forbes' case. Drake-Brockman states that when urotropin is used "as a diuretic, it may cause slight purging, particularly if there be enlarged prostate and irritable bladder." Grosglik has seen urotropin cause diarrhea, but fails to state in how many cases. The diarrhea ceased on the discontinuance of the drug.

3. *Irritation of the Skin with a Measles-like Rash.*—Only one case of this has been reported (Cammidge). It occurred during an experiment on a healthy adult taking 10 grains of urotropin three times a day. The iritation began on the fourth day of the experiment as formication, which was most marked at night and in parts pressed on by the clothing. It became more intense each day and on the sixth day a diffuse red rash, somewhat like measles, appeared. Both the irritation and rash disappeared quickly when the urotropin was discontinued.

4. *Headache and Ringing in the Ears.*—Suppan reports that some patients had headache and ringing in the ears, but states that these effects usually diminished when the use of the drug was persisted in.

5. *Irritation of the Kidneys.*—Ordinarily, urotropin causes no irritation of the kidneys, even when they are the seat of previous disease. In fact Nicolaier states that he has seen the disappearance of albumin and casts as well as blood from the urine under the action of urotropin. Yet urotropin undoubtedly has caused renal irritation. Nicolaier succeeded in producing albuminuria in a rabbit after single daily doses of 150 grains of urotropin. Grosglik states that pains in the region of the kidneys occurred in some of his cases (number not stated) after the use of urotropin, and disappeared on withdrawing the drug. Keyes and R. E. Brown have seen renal irritation result from urotropin. Griffith has reported the following case of albuminuria:

Patient, aged twenty-one years, mild typhoid fever. Up and on a fish diet. Taking 10 grains of urotropin three times a day. On the tenth day, was quite ill with backache, swelling of the eyelids and weakness. The urine was almost solid with albumin. The urotropin was immediately discontinued, with the result that the albumin disappeared by the third day. The patient continued well.

The readiest explanation of the irritant action of urotropin on the kidneys is that formaldehyde as it is split off acts as a local irritant in susceptible cases.

b.—Irritation of the Bladder.—This manifests itself under two forms, (1) strangury, and (2) cauterization (Keyes, Jr.) of raw surfaces.

1. *Strangury.*—Irritation of the bladder is perhaps more commonly seen than any other toxic effect of urotropin. Nicolaier stated in his original paper that several patients after continued large doses of urotropin complained of burning in the vesical region, generally after micturition, which radiated along the urethra, and was sometimes accompanied by increased frequency of urination. Examination of the urine in these cases showed only a moderate amount of transitional epithelium and no other abnormal constituents. If in spite of these symptoms, the remedy was continued in the same doses, the trouble increased in severity, and occasionally

red blood corpuscles appeared in the sediment. With diminution in the size of the dose or discontinuance of the drug, the irritation disappeared.

Nicolaier also mentions a case of cystitis, probably of several years' duration, with ammoniacal urine and only slight vesical pains, in whom the pains were increased by the administration of 90 grains of urotropin a day. With doses of 7½ to 22 grains per day, the pains were not present, or at most, only transient.

Wider experience with urotropin has shown that vesical irritation, even with proper dilution of the drug, is not an infrequent result of its action. Keyes believes that urotropin is distinctly irritating to the bladder and states that, though this belief is at variance with many authorities, it is founded upon extensive clinical experience. As already said he has found that in straightforward cases of chronic posterior urethritis and acute cystitis, urotropin may do more harm than good.

The vesical irritation may vary from slight increase in the frequency of micturition to intense strangury, accompanied by the presence of blood in the urine. The tendency to vesical irritation is proportional to the size of the dose only in general terms: it appears to be due rather to individual susceptibility. I have seen a single dose of 7½ grains of urotropin, properly diluted, produce such intense strangury that opium and hyoscyamus suppositories had to be given for relief, yet Nicolaier has administered as much as 90 to 150 grains daily without such effects.

It is undoubtedly true that in many instances the vesical irritation has been attributable to the fact that the urotropin has been administered in too concentrated form.

2. *Cauterization of a Raw Surface.*—In this connection an observation made by Keyes, Jr., of an irritant action of urotropin on an operation wound of the bladder is of interest. The observation in brief was as follows:

After suprapubic prostatectomy the lower part of the wound which was left open for drainage and was bathed with urine containing urotropin (5 grains, t. i. d.) became covered with a leathery slough by the second day, and remained in an unhealthy condition until (eighteenth day) the urotropin was discontinued. Afterward the wound healed uneventfully. He has seen a similar reaction in a wound of the scrotum which had been irrigated with formaldehyde. While he believes that this tendency to slough under the action of urotropin is a personal idiosyncrasy, he thinks that the fact should be kept constantly in mind.

Ehrmann has reported a case in which urotropin acted somewhat similarly: Patient, aged twenty-five years, tuberculous infiltration of the prostrate, tuberculous cystitis and ulcers of the urethra. The administration of urotropin was followed by improvement in the condition of the urine, but the patient complained of burning along the urethra which was probably due to the action of urine containing formaldehyde on parts of the urinary passages denuded of epithelium.

c. Hematuria and Hemoglobinuria.—As already stated, Nicolaier observed the presence of red blood cells in the urine after large doses of urotropin, especially if the drug was not discontinued or its dose diminished after the occurrence of strangury. In a case of tuberculous cystitis reported by him, urotropin caused the appearance of red blood corpuscles in the urine, but not in sufficient number to give it color. Nicolaier produced hematuria experimentally in dogs with urotropin, but only after the administration of single daily doses of 230 grains.

A careful search of the literature has brought to light *seven cases of hematuria* caused by urotropin, with one doubtful case, as the patient was taking turpentine in addition to urotropin. Hayden, Swinbourne, Johnston and Keyes, Jr., who use the drug extensively, tell me they have never seen it cause hematuria. In a case which has come under my observation there was marked hemoglobinuria in addition to the hematuria, the number of red cells being totally inadequate to account for the amount of hemoglobin.

Case I.—Reported by T. J. L. Forbes. Patient aged sixty-two years. Cystitis of ten days' duration. The urine was ammoniacal and contained pus but no blood. Prostate enlarged. Urotropin was given in 10-grain doses thrice daily, dissolved in half a pint of warm water. Two days later the urine was better. On the third day the patient complained of dysuria, burning along the urethra, abdominal pain with diarrhea, and had marked hematuria. The urotropin was immediately discontinued; by the fifth day the blood had disappeared and the urine had become ammoniacal. The urotropin was resumed, but in smaller doses—5 grains t. i. d.—and again, after the third dose, there were strangury and hematuria. Forbes believed that the bladder was the source of the hemorrhage.

Case II.—Reported by W. A. Milligan. Girl aged fifteen years; given 5 grains of urotropin three times a day to produce diuresis. After taking the drug for seven days the patient suffered from an uncomfortable sensation in the bladder, accompanied by increased frequency of micturition. Hematuria followed and according to the patient was pronounced. Thinking nothing was wrong, she continued to take the urotropin two days longer, and as her condition became worse sought advice. Examination of the urine showed a large amount of blood. The urotropin was immediately discontinued, with the result that the hematuria ceased and the urine became normal in two days' time.

Case III.—Reported by W. Langdon Brown. Patient aged thirty-three years. Typhoid fever. Ailing for some weeks, ill and delirious for four days before admission. Given urotropin, 10 grains three times a day. Two days later complained of pain and dysuria. On the seventh day, blood was present in the last portion of the urine. On the eighth day, blood was seen oozing from

the meatus, and a little more blood was seen the same evening. The urotropin was stopped, and on the ninth day, the dysuria and blood had disappeared.

Case IV.—Reported by W. Langdon Brown. Patient aged twenty-four years. Typhoid fever. Ailing for a few weeks. Ill in bed for two days before admission. Given 10 grains of urotropin three times a day. On the sixth day the patient suffered from pain and dysuria. On the seventh day blood with actual clots appeared. The urotropin was stopped. The following day the condition had improved, and soon entirely disappeared.

Case V.—Doubtful. Reported by W. Langdon Brown. Details not given. Author simply states that a typhoid fever patient taking urotropin developed hematuria, but that the patient was also taking turpentine, and hence the hematuria cannot be charged entirely to the urotropin.

Case VI.—Reported by Alfred Gordon. Patient aged twenty-nine years. Cerebrospinal syphilis with cystitis. Given 5 grains of urotropin three times a day. By the end of a week the pus had diminished in quantity. Four days later, or about the eleventh day, blood appeared with each urination. The urotropin was stopped and the hematuria disappeared. After an interval, urotropin was again given with the same result.

Case VII.—Reported by Nicolaier. Patient, a boy aged eleven years. Difficulty in passing urine for six weeks but no pain. At night urine was passed involuntarily. His lungs were unsound and albumin, pus cells and tubercle bacilli were found in the urine. There was pain in the kidney region. He was given 3¾ grains of urotropin twice daily, which he bore well, but without effect on the urine. One year later patient returned for treatment. Urinary organs in same condition. Few red blood cells in the urine, but not enough to color it. Given 3¾ grains of urotropin four times a day. After a week of this treatment there was not only no improvement, but hematuria had occurred. The blood dropped to the minimum when the drug was discontinued. Again the urotropin was given and again the hematuria appeared. The drug was withdrawn and the urine returned to its former condition.

Case VIII.—Reported by H. C. J. Biss. Female, thirty-three years old, suffering with typhoid. Bacilluria on fifty-fourth day. Urotropin was given in 10-grain doses thrice daily. Strangury occurred four days later. On the thirteenth day hematuria accompanied the strangury. The urotropin was then discontinued. The strangury disappeared in two and the hematuria in four days.

Case IX.—Personal observation. This case possesses unusual interest from two standpoints, the occurrence of cystitis as a complication of pneumonia,* and the development of hematuria and hemoglobinuria within twenty-four hours after the administration of 7½ grains of urotropin. A woman, aged seventy-three years, was taken ill with pneumonia. Seven days later, before the lung had cleared, the patient complained of a burning sensation in the region of the bladder with increased frequency of micturition. This condition had developed without previous catheterization or other interference with the bladder. Examination of the urine showed a few pus cells as the only abnormal feature. The vesical irritation gradually increased in intensity during the next four days in spite of treatment, and during the afternoon of the eleventh day the urine became very cloudy. By the following morning it was ammoniacal. At 10.25 that morning the patient was given 7½ grains of urotropin dissolved in half a pint of water. (The frequent intervals at which the patient was taking nourishment threw the urotropin within an hour after she had had 3 oz. of squeezed beef.)

By two o'clock intense strangury had developed from which she got no relief in spite of the free use of opium and hyoscyamus suppositories, until 7 o'clock. I withheld the urotropin after the first dose but that night ordered another tablet for 7 A.M., without cautioning the nurse not to give it in case the urine became bloody. At 4 A.M. or 17½ hours after the urotropin was given, the urine was deeply blood-stained, and at 7 o'clock as ordered—before my morning visit—the second tablet of urotropin was administered, this time on an empty stomach.

The chief points in the examination of this urine were, its alkaline reaction, dark red color (absorption bands of reduced hemoglobin), heavy cloud and gelatinous sediment, large amount of mucus, pus cells, epithelium (some cells from bladder) and red blood corpuscles.

Though the red blood corpuscles were numerous, their number was not sufficient to account for the amount of hemoglobin present, so that we must recognize the presence of hemoglobinuria as well as hematuria. A careful search was made for blood casts, but none were found.

Irrigation of the bladder was begun the day the hematuria appeared.

The urine possessed the same characters for twenty-four hours, then its color became lighter, and by night was almost free from blood. The next morning (forty-eight hours after the hematuria developed) the condition of the urine was as bad as ever, but the blood disappeared during the day. On the fourth day (counting from the urotropin) there were only a few streaks of blood, caused evidently by the irritation of the catheter used in irrigation.

The urine was now free from blood till the night of the seventh day, when the catheter again apparently brought away a few streaks (urine passed before the irrigation contained none).

Then on the ninth day the hematuria (without hemoglobinuria) developed again, the urine clearing by the night of the tenth day, and on the eleventh day the urine was free from blood. On

* Hare and Dare in their exhaustive study of the Complications of Pneumonia do not mention cystitis.

the twelfth day the hematuria reappeared, became more marked that night, and though varying in amount did not completely disappear till the night of the fifteenth day.

If urotropin is entirely eliminated from the body within a day or two after its administration, then the reappearance of the hematuria on the ninth day and its paroxysmal nature afterward introduce another element into the case which will be discussed later. As neither a bacteriologic nor cystoscopic examination was to be thought of except as a last resort, two important points must remain undetermined—the bacteriological cause of the trouble and the state of the bladder wall.

The urine now remained free from blood for nearly four days and the vesical irritation became much less distressing, yet the evidences of cystitis persisted unabated. The urine was very foul, containing so much mucus that it would block a large catheter, large numbers of pus cells, and so many triple phosphate crystals that small concretions often came away in spite of two thorough irrigations a day.

In view of the condition of the urine and the uncertainty in my mind as to the extent to which the urotropin was implicated, I determined to give the drug another trial. It certainly was indicated. Accordingly I ordered another dose of 7½ grains dissolved in half a pint of water. The drug was given at 5:45 A.M., three-quarters of an hour after milk. Within three hours strangury had developed and in 4¼ hours the hematuria and hemoglobinuria returned. By night the strangury had diminished and the condition of the urine improved. The blood disappeared by morning and there has been no return of it. As I write, six weeks later, the bladder has returned to practically a normal state, only a few pus and epithelial cells remaining.

The reappearance of the strangury, hematuria and hemoglobinuria, after the urine had remained clear for nearly four days, within five hours after the dose of urotropin and their disappearance within twenty-four hours after withdrawal of the drug, seem to justify me in the conclusion that urotropin was the immediate cause of the hematuria and hemoglobinuria.

If this conclusion is warranted, then the condition of the urine during the sixty hours following the first administration of the drug is directly attributable to it. But some other explanation must be offered for the return of the hematuria on the ninth day and its paroxysmal nature for the six succeeding days, because no urotropin had been given. The most plausible assumption is that of ulcer of the bladder wall. There was presumptive evidence of this in the great distress which the irrigations caused and in the fact that several times urine passed but a short time before the passage of the catheter for irrigation would be clear, while that which came away through the catheter would contain blood, particularly toward the end. The diagnosis, of cystitis with ulceration of the bladder wall, while not absolute for lack of a cystoscopic examination, seems justified by the facts.

The hematuria and hemoglobinuria after the first adminstration of urotropin lasted sixty hours, after the second for twenty-four hours. The explanation of this difference lies in the fact that two doses of seven and one-half grains each were given at an interval of about twenty-one hours, on the first occasion. It would be interesting to know to what extent the condition of the bladder wall contributed to the production of the hematuria, or if in this case hematuria would have occurred without a preexisting anatomical change in the bladder wall.

Concerning the source of the blood in hematuria caused by urotropin, Forbes has expressed the opinion that it comes from the bladder and the fact that in one of W. Langdon Brown's cases blood was seen to ooze from the meatus urinarius confirms this opinion. In my own case I was led to the same conclusion.

As in all of the cases of hematuria, strangury has preceded the presence of the blood, this symptom should be looked upon as an indication of danger.

Johnston has observed two cases in which hematuria disappeared while the patients were taking urotropin.

Case I.—A girl aged twenty-two years, was taken with characteristic symptoms of catarrhal grip. Hematuria and hemoglobinuria appeared two days later. Blood was present in such quantity that clots formed in the urine on standing. She was given 7½ grains of urotropin three times a day to prevent bladder infection, and the urine cleared absolutely in five days.

Case II.—Male, aged thirty years, teamster, was perfectly well previously. Hematuria followed lifting a heavy piece of furniture, and was marked. Given 7½ grains of urotropin three times a day. The hematuria had improved after four days and was gone in a week.

Since the physiologic and therapeutic actions of urotropin are due to the liberation of formaldehyde in the dissociation of the urotropin molecule, re-combinations aside, it will be interesting to inquire to what extent the toxic effects of urotropin have been reproduced by intravenous injections of formaldehyde.

Robert Maguire has performed three remarkable experiments upon himself with formaldehyde. The facts of these experiments will be seen to have important bearings upon the toxic actions of urotropin.

Maguire had his house physician inject 100 cubic centimeters of a 1:2,000 solution of formaldehyde into a vein of his arm. Formaldehyde appeared in the urine in about one hour, the urine became abnormally acid and contained albumin. In another hour the urine had returned to normal.

In this experiment 0.064 grm. of formaldehyde was used, giving approximately 1:100,000 of total blood. A few days later 263 cubic centimeters of a 1:2,000 solution of formaldehyde were

injected into a vein rather quickly. The solution gave out or Maguire would have taken more. "Immediately," he says, "hematuria and hemoglobinuria appeared." An hour later the urine was still more bloody. Then, when passing urine four hours later, he found that small blood clots had formed in the bladder, which were expelled with difficulty. Considerable irritation of the bladder was present. Still later, the urine was of a brownish tint, but contained no ordinary albumin or ordinary blood-coloring matter. (He was unable to collect the urine for a complete examination.) The following day all the urinary changes had disappeared.

The amount of formaldehyde used was 0.168 grm. giving approximately 1:40,000 of total blood.

On still another occasion Maguire took 63 cubic centimeters of a 1:1,000 solution of formaldehyde. The experiment was stopped because of "extreme cramp-like pain and faintness." There was great irritability of the bladder but no urinary change. A mild but troublesome attack of dysentery developed, the intestine pouring forth a great quantity of mucus. Shortly after the injection he suffered from severe bronchial catarrh, in fact from catarrh of nearly all the mucous membranes, as far as could be ascertained, except the stomach. The amount of formaldehyde used was 0.081 grm.

These experiments are suggestive from several standpoints and throw at least some light upon certain hitherto unexplained actions of urotropin. They prove that under certain conditions formaldehyde may cause hematuria and hemoglobinuria, and suggest that when urotropin causes strangury the cause is the liberation of free formaldehyde in the urine. The appearance of the red blood corpuscles in the urine immediately after the injection and the presence of blood clots four hours later seem to implicate both bladder and kidneys in the production of the hematuria and to prove that the immediate cause of the bleeding is a local irritant action of the formaldehyde.

Ewing, Park and Payne have found from experiments on rabbits that intravenous injections of dilute formaldehyde solutions cause destruction of red blood corpuscles. The estimated proportion of formaldehyde in the blood in one of Ewing's rabbits, 1:11,000, was much higher than in Maguire's experiment upon himself, 1:40,000, yet only in Maguire's case did hematuria and hemoglobinuria occur. Nor is any change in the urine recorded in the experiments of Park and Payne.

We find, then, that all the more important toxic actions of urotropin (intestinal irritation, renal irritation, strangury, and hematuria and hemoglobinuria) have been produced by intravenous injections of formaldehyde.

Prof. Witthaus informs me that one gram of urotropin yields, in complete decomposition. 1.2842 grams of formaldehyde. The amount of formaldehyde employed in Maguire's second experiment and which caused such severe toxic symptoms, was 0.168 grm. Here we have further evidence that urotropin when given by mouth is only partially decomposed in the body, and from the presence of urotropin itself in the urine, that this decomposition takes place only, or at least chiefly, after its excretion by the kidneys. In the single case in which hemoglobinuria occurred after administrating urotropin, it must be assumed that the drug was decomposed either in the stomach or in the blood, since the hemoglobinuria cannot be accounted for on any other assumption.

Conclusions.—1. That the administration of urotropin may be, but is only rarely, attended by toxic effects.

2. That toxic actions (especially strangury) occur with comparative frequency if the urotropin is not properly diluted.

3. That the development of toxic effects is not always, or necessarily, correlative with the size of the dose of urotropin.

4. That individuals vary greatly in their susceptibility to the action of urotropin.

5. That urotropin has been known to produce the following toxic effects:

A. *Minor Toxic Actions.*—(1) Irritation of the stomach; (2) diarrhea and abdominal pain; (3) measles-like rash; (4) headache and ringing in the ears; (5) renal irritation, sometimes with albuminuria.

B. *Irritation of the Bladder.*—(1) Strangury, the most common of the toxic effects; (2) irritant action on raw surfaces in the urinary passages.

C. *Hematuria and Hemoglobinuria.*—Eight positive cases of hematuria, following the administration of urotropin, and one doubtful case, have been reported. In one case hemoglobinuria was associated with the hematuria.

6. That the more important of these toxic actions have been produced by intravenous injections of formaldehyde.

7. That the toxic actions of urotropin are due either (1) to special susceptibility to the action of formaldehyde or (2) to interference with the usual disposition of formaldehyde in the body, or (3) to the liberation of an unusual quantity of formaldehyde.

8. That the toxic effects of urotropin generally disappear completely within a few days after withdrawal of the drug.

BIBLIOGRAPHY.

The following bibliographical list contains but a small proportion of authors consulted in the search for the toxic actions of urotropin, and includes only those whose statements and opinions have been quoted:

Biss, H. E. J.: Edinburgh Med. Jour., 1902. N. S., Vol. XII, p. 337.
Brown, R. E.: Personal communication.
Brown, W. Langdon: Brit. Medical Journal. 1901. I, 1472.
Cammidge, P. J.: London Lancet, 1901, I, 174.
Casper, L.: Deutsch. med. Woch. No. 45, Nov. 4, 1897. Monatsberichte über die Gesamtleistungen auf d. Gebiete d. Krandh. d. Harn- und Sexualorgane, 1898. Bd. III, No. 1.
Citron, A.: Monatsberichte des Harn- und Sexualapparates, Feb., 1898.
Drake-Brockman, H. E.: London Lancet, June 30, 1900.
Ehrmann: Wien. med. Presse, 1899. No. 25.
Ewing, J.: Personal communication.
Forbes, T. J. L.: Brit. Medical Journal, 1901, I, 1617.
Gordon, A.: American Medicine, Nov. 30, 1901, p. 848.
Griffith, A.: Brit. Medical Journal, 1901, I, 1617.

Grosglik: Centralbl. für die Krankheiten der Harn- und Sexualorgane. Bd. XI, Hft. 5, p. 239.
Hare and Dare: MEDICAL NEWS, 1902, pp. 348-385.
Hayden, J. R.: Personal communication.
Johnston, J. C.: Personal communication.
Keyes, E. L. and E. L., Jr.: Surgical Diseases of the Genito-Urinary Organs, p. 373 *et seq.* Advance sheets kindly supplied by Dr. E. L. Keyes, Jr.
Keyes, E. L., Jr.: Phila. Medical Journal, Sept. 29, 1900.
Linnoissier: Quoted by R. W. Wilcox, MEDICAL NEWS, Nov. 12, 1898.
Loebisch: Wien. med. Presse, 1901, XLII, 1273, 1330.
Maguire, Robert: London Lancet, 1900, II, 1709 *et seq.*
Mendelssohn: Berl. klin. Woch., 1898.
Milligan, W. A.: Brit. Medical Journal, 1901, I, 1617.
Nicolaier, A.: Deutsch. med. Woch., August 22, 1895; Der ärztliche Praktiker, 1897, No. 12; Zeitschr. für klin. Med., B. 38, H. 4, 5, 6, 1899.
Park and Payne: MEDICAL NEWS, April 4, 1903, p. 639.
Richardson, M. W.: Journal Experimental Medicine, IV, I, 1899.
Suppan: Wien. med. Blätter, No. 28, July 12, 1900.
Swinburne, G. K.: Personal communication.

OBSERVATIONS ON EIGHTEEN ABDOMINAL SECTIONS, PERFORMED WITHIN THE PAST YEAR, INCLUDING THE SUCCESSFUL REMOVAL OF AN OVARIAN CYSTOMA WEIGHING SEVENTY-TWO POUNDS.*

BY EDWARD N. LIELL, M.D.,
OF JACKSONVILLE, FLA.;
FORMERLY LECTURER ON GYNECOLOGY, NEW YORK POLYCLINIC; VICE-PRESIDENT, FLORIDA STATE MEDICAL ASSOCIATION.

DURING a period of a little over twelve months I have performed 18 abdominal operations for various conditions existing within the abdominal and pelvic cavity. These were as follows:

Five for ovarian cyst; five for cystic disease of ovary; four for appendicitis; one for intestinal obstruction; one for ruptured tubal pregnancy; two myomectomies for uterine fibroid.

In addition to these I have performed vaginal section twice, once for suppurating pelvic hematocele, and once for pelvic abscess. None of the patients operated upon were from the service of any hospital, some being seen with and operated upon for fellow practitioners. In several of the cases the diagnosis was made by the attending physician before I saw the patient.

I have no wish to take up your time stating the cases in detail, but some of them call for comment at my hands, in that these present some features of interest and demonstrate the value of surgical interference, which is looked upon much more favorably by a discriminating public to-day, the suggestion by the surgeon that an operation is required finding a more ready response from the patient. No surgical procedure, however, should be advised or adopted except there be a reasonable hope that it will result in the cure or marked relief to the patient. Unfortunate results have followed operations performed as a last resort, as well as operations attempted by those whose opportunities have been too limited to fit themselves for the work.

The fascination of abdominal surgery, the brilliant results achieved, and its increasing scope but stimulates our attention to its importance. The incision by McDowell, that marked the birth of successful ovariotomy; the successful operation for vesicovaginal fistula, through the master-hand of Marion Sims, which gave birth to the surgery of diseases of women; and the recognition by Lawson Tait of the true pathology and diagnosis of ovarian and tubal disease and their imperative removal: these are distinctive as well as progressive periods. The perfected work in pelvic surgery to-day, the treatment of inflammatory diseases of the ovaries and tubes, of pelvic hematocele, of fibromyomata, of uterine displacements, these and others lead us to appreciate the difficulties and helplessness of surgeons who have preceded us in this field. The axiom of Lawson Tait "When in doubt, make an exploratory incision" has proved the searchlight in pelvic surgery, and the morbid specimens thus removed gave an impetus to the science of pathology by affording an opportunity for interesting study. As the etiology of pelvic disease has been more closely defined so has the treatment of the various conditions advanced upon a more scientific basis.

The class of cases first to be referred to is that of ovarian cyst. In one of the five patients upon whom I operated the tumor weighed 72 pounds. This patient, aged twenty-seven years, had been married seven years and was sterile. About the time of her marriage she noticed a slight enlargement on the left side of the abdomen, which steadily increased in size, her abdomen being enormously distended at the time she consulted me in November, 1901, she having considerable difficulty in breathing and being obliged to sleep in a semi-reclining position because of abnormal pressure. Examination showed the uterus to be but slightly enlarged and anteverted. I made a diagnosis of ovarian cyst and advised operation, to which she subsequently consented. Upon abdominal section, April, 1902, the diagnosis was verified, when I removed an enormous unilocular cyst of the left ovary, the contents, of a turbid, syrupy consistence, containing varied-sized fat globules, measuring 6¾ gallons and weighing with the removed sac 72 pounds. The shock to the patient in the removal of such an enormous tumor was much less than I anticipated, though this may be accounted for in great part by the fact that I evacuated the contents gradually, twenty-five minutes being taken therefor, preliminary to enucleation of the sac. The adhesions were profuse, numerous bands necessitating ligation with catgut; the pedicle of the tumor or sac was four inches broad, enucleation of which being by what I term an Odd-Fellow's signia chain ligature of heavy twisted silk, followed by a re-enforced double-loop ligature. The walls of the sac varied from one-eighth to one-third of an inch in thickness. As the adipose tissue of the abdomen was 1¼ inches in thickness, the patient having weighed 227 pounds previous to operation, I concluded to suture the peritoneum separately with catgut, using the interrupted Lambert suture; the fascia and muscle were then brought in perfect apposition with heavy catgut, and the remaining wound left to

*Read at the Thirtieth Annual Meeting of the Florida State Medical Association, held at St. Augustine, April 8 and 9, 1903.

close by granulation tissue, with dressings of iodoform gauze, the wound being entirely and firmly closed at the end of six weeks. Time of operation, one hour and twenty minutes; highest temperature, 99½° F., on the third day. The right ovary and tube, apparently normal, were not removed. When last seen by me, five months after operation, the patient was in perfect health, the cicatrix being firm with no tendency to ventral hernia.

The other case in this class which I wish to make mention of was a woman aged sixty-five years, married and also sterile. When referred to me she had just recovered from an attack of traumatic peritonitis, on the left side mainly, and it was at this time that a growth was noticed on the right side by the attending physician, the patient never having been conscious of such until so informed. Upon examination the diagnosis was made of ovarian cyst, mobility being independent of the uterus. An abdominal section showed the tumor to be a right parovarian cyst the size of an ordinary grape fruit, having a twisted pedicle, with profuse adhesions to intestine and omentum, the result of peritonitis previously referred to. After carefully separating the adhesions the sac was unfortunately ruptured in my efforts to enucleate the growth intact; the peritoneal cavity was irrigated with normal salt solution, no drainage, and the abdominal wall sutured through and through with twisted silk. The patient made a gradual but uninterrupted convalescence.

Of the five cases operated upon for cystic disease of the ovaries, but one will claim your attention, it being one associated with complete retroversion of the uterus with adhesions, the left ovary being three times the normal size, the right sclerotic and somewhat atrophied. This patient, aged twenty-eight years, married two years and sterile, gave the usual history of premenstrual pain, backache, with added irritation of the bladder and frequent micturition. After freeing the uterus from its attachments posteriorly, followed by the removal of both ovaries and tubes, I performed a ventrosuspension of the uterus, a portion of each latero-anterior surface of the fundus being sutured loosely with catgut to the peritoneal tissue at the lower angle of the abdominal wound. These combined operations relieved the patient not only of pain but of the bladder distress as well. In this connection I would note that of the nervous disturbances in women a large percentage is the direct result of inflamed or diseased ovaries and tubes. Where the ovary and tube of one side only is involved we conserve the sacrifice of the opposite ovary and tube.

Of the four cases of appendicitis operated upon by me it was my misfortune to lose two. These deaths, however, can not be attributed to the operator, they being operations of emergency,—suppurative and perforative, and which I was called in haste to perform many miles from Jacksonville. Were it a question of a surgeon's percentage mortality and recoveries my better judgment would have dictated not to operate in these cases; it was the desire of the attending physicians and the parents of both patients that I should give the patients the possible chance, which I proceeded to do. In operations of emergency, even though death be invited, one cannot always decline to operate.

In every case of fatal appendicitis there has been a period in which the patient could have been successfully operated upon. There is no other major surgical operation which is so reasonably sure of success, symptomatically as well as surgically, after early operation, and when prompt interference means as much to the patient as in appendicitis. Elevation of temperature, while a necessity to diagnosis, is no indication of the degree or extent of the pathologic process; furthermore, preconceived ideas based upon experience often prove valueless, as a positive opinion prior to operation cannot be given as to location, attachment or condition of an appendix.

Of the two recoveries, in one, a young man aged twenty-eight years, who was operated upon in May last, temperature being 102⅗° F. at the time of operation, the appendix was of a size of one's little finger, acutely congested and in part gangrenous and bordering on perforation; the omentum was very much injected and partly adherent; this was separated and a portion of the adherent omentum removed; the mesentery attachment was firm with a broad base and pedicle, silk being used as ligature. In this instance the pedicle ligature worked up through a narrow sinus and was extracted two weeks subsequent to operation. This case was of rapid development. The second case of recovery was one of interval operation; by that I mean I operated after a second attack, thus precluding a third attack. The appendix in this instance was rather long and adherent to the cecum, which adhesions were carefully separated before ligation.

The two cases in which death occurred are of interest; in one, a girl aged thirteen years, the disease was fulminating in character, of but three days' duration. The appendix was the diameter of one's thumb, gangrenous and having sloughed at its base, with honey-combed pus pockets and adhesions profuse; septic peritonitis was in evidence. A hard, fecal endolith the size of an orange seed was found in the middle third of the appendix, a condition which in the early days of appendicitis had given rise to the theory of orange, lemon or cherry pits as the chief factor in etiology. The other case, a young man aged nineteen years, temperature 103° F. was what I term one of sacculated suppurative appendicitis, an appendiceal abscess with protective adhesions, in which I removed fully a quart of fetid pus, the abscess cavity being drained by means of iodoform gauze strips carried through a small opening left unsutured in the abdominal wound, the sac not being removed. This case is a remarkable instance of appendiceal abscess with protective adhesions, in which sac there was contained fully one quart of fetid pus which had

been forming some days, the first symptom of appendicitis having developed almost three weeks previous to operation. It is of further interest in that it presented conditions similar to those existing in the case of King Edward VII, operated upon less than a year ago, though in my case the patient's vitality was at a low ebb at the time of operation.

In the case of intestinal obstruction, the patient was aged thirty-three years and single. She had been operated upon about eight years ago by Dr. Joseph Price, of Philadelphia, at which operation the tubes and ovaries were removed. About five years ago she began to complain of a sense of discomfort and dull aching in the right iliac region, which had gradually increased in intensity. Three days previous to my seeing her, in consultation with a fellow practitioner in another city, she presented symptoms of intestinal obstruction. Upon examination of the patient I believed the appendix to be also involved, the conclusion being arrived at by the attending physician and myself that the obstruction of the bowel was evidently the result of some adhesion or fibrous band. Immediate operation was advised and accepted. A loop of the ileum, within a foot of the ileocecal junction, was found strangulated and cyanosed by a fibrous band one inch in length and the diameter of a goose quill, running from the stump left of the broad ligament to the middle portion of an elongated appendix, the latter being very much injected and inflamed. The fibrous band was ligated with catgut at the old stump and the appendix, including the band, removed entire. Patient was entirely relieved of all untoward symptoms and made an excellent recovery.

The fifth class of cases, that of tubal pregnancy, I have operated for twice, both successfully, within the past thirteen months; one by abdominal section three weeks previous to the last meeting of this Association at Tampa and which case I reported with specimen, at said meeting. As a coincidence, I operated upon a second case of ruptured tubal pregnancy within a month of the one reported, though I performed a vaginal section in this instance, with equally good result. The condition was one of suppurating pelvic hematocele, the inflammatory retro-uterine pelvic mass being about the size of a large grape fruit. The patient, aged twenty-nine years, had two children, and gave a history of menstrual suppression and complicated pelvic trouble of several months' standing. A free transverse incision in the posterior vaginal wall and evacuation of the contents of the sac—protective adhesions having confined the contents—was followed by packing the cavity with iodoform gauze and subsequent repeated dressings.

Tubal pregnancy is much more frequent than we have been led to suppose, Formad having found it in 35 autopsies in deaths from other causes. The question of recognition and diagnosis previous to rupture, when the opportunity for investigation presents itself, is a leading one and is practicable in a majority of cases. There are a number of instances recorded of recurring tubal pregnancy, and while such may be expected in a considerable proportion of pregnancies that occur subsequent to a tubal pregnancy, I do not believe we are justified in removing the remaining and apparently normal tube and ovary at the primary operation.

The sixth and last class, that of myomectomy for uterine fibroids, I have operated upon two cases. The first, a woman aged thirty-two years, married and sterile, gave a history of severe backache, a sense of weight in the pelvis and a frequent desire to urinate; menstruation regular. Upon examination the uterus was retroflexed, somewhat prolapsed and enlarged to the size of a large orange, the posterior portion being especially developed. A diagnosis of fibroid was made and operation advised and accepted. Abdominal section showed a fibroma the size of a lemon, subperitoneal, having a broad base and springing from the posterior wall of the uterus. Here then was a typical case for the comparatively new operation of myomectomy, of which I took advantage. I made a free perpendicular incision in the posterior wall of the uterus through the peritoneum and the capsule of the fibroid and enucleated or rather shelled out the latter, hemorrhage was controlled by a rubber ligature around the cervix, and a portion of the excess peritoneal tissue was then excised in order that the line of suture, which included a portion of uterine tissue, would coapt the peritoneal edges more closely; medium-sized catgut was the suture material used. Patient made an uneventful recovery.

The second patient upon whom I performed a myomectomy for fibroid had not yet passed the climacteric; she had borne two children and for five months previous to operation had irregular hemorrhages; examination detected a fibroid the size of a large walnut in the anterior wall of the uterus. Upon abdominal section I found that its removal was equally feasible as in the preceding case, and, therefore proceeded to do a myomectomy; being on the anterior wall and thus more readily reached, its removal was not as difficult as the case just referred to.

The operation of myomectomy or fibroid enucleation, whenever possible, should take the place of amputation or total extirpation of the uterus. It is the operation of election in all single and multiple subserous tumors with well-defined borders; but the question can be decided usually only after opening the abdomen.

While the causes of fibroma are as obscure as those of tumors in general, yet from the present state of our knowledge of fibroid development and the pathological changes which take place in such tumors, and the frequently accompanying chronic invalidism or fatal termination, I am convinced that these should warrant surgical interference independent of any absence of symptoms of either pain or hemorrhage. Furthermore, the mortality of a do-nothing treatment is over 30 per cent., as compared with 5 per cent.

through surgical interference by skilled operators, as shown by tables given by Martin, of Berlin, and Noble, of Philadelphia

It has been my good fortune in my abdominal work for many years past, never to have met with an instance of secondary hemorrhage. I have never departed from silk as a ligature, the size of the silk used depending upon the size and thickness of the pedicle; I always make positive that my ligatures are both well-placed and always reinforced. Catgut has always seemed to me treacherous, the main difficulty being in tying it firmly so as not to slip and also its liability to fray.

The best means of prevention of abdominal or ventral hernia are small incisions and accurate coaptation of the various layers of tissue, thus securing firm apposition. In layer or tier suturing, desirable in patients with considerable adipose tissue, catgut and kangaroo tendon, in my opinion, are preferable and meet the indications best, being absorbable.

A point which I desire to emphasize is needless delay in operating as a factor leading to increased mortality. The diagnosis having been made and the necessity for operation having been determined, it is well to obtain the patient's immediate consent thereto and thus avoid the mental worry and excitement postponement may cause the patient.

THE EFFECT OF ERYSIPELAS UPON ATROPHIC RHINITIS; WITH REPORT OF CASE.*

BY LEWIS S. SOMERS, M.D.,
OF PHILADELPHIA.

WHILE the report of a single case of any disease which has been benefited by measures somewhat foreign to those usually found of value, can in itself prove of little service, yet isolated facts present possibilities for future studies on a larger scale and, therefore, the case which forms the subject of this report seems suggestive in the light of the present trend of serotherapeusis.

Atrophic rhinitis accompanied with ozena and not dependent upon disease of the accessory sinuses, implies by the very nature of its pathology, a condition which of necessity is not susceptible to complete structural restoration and it also implies not only the avoidance of the individual so affected by those with whom he comes into contact, but the constant attention to the nasal passages with all the difficulties encountered in the removal of the tenacious and partially dried secretions. While cases of this affection have from time to time been reported as being cured by various local measures, such results are but partial and do not apply to the restoration of the atrophied turbinal tissue, but rather to a clinical disappearance of the subjective symptoms and odor; which is satisfactory to the patient and from the nature of the case is practically all that can be expected.

As is well known there exists a certain antagonism between various diseases, the presence of one affection precluding for a time, at least, the development in the same individual of another, the immunity thus conferred existing for various periods of time; yet to a lesser extent and infrequently, the protective immunity of one disease over another is not only conferred upon the individual, but this power is more largely emphasized by the observation that in certain instances a pre-existing affection may be cured by the development of another disease in the same individual; erysipelas being the type of the disease at times presenting this therapeutic efficiency and the one which has been studied in this connection to the greatest extent, while advantage has been taken of the fact to use the products of the erysipelas organism in the combat against certain malignant changes. The following case is therefore presented because of its peculiar interest, inasmuch as it shows an apparent clinical cure of atrophic rhinitis in which ozena was prominent, and secondly, the manner in which this favorable termination was secured, that is by the influence of a severe attack of facial erysipelas.

W. S., male, aged thirty-eight years, had always been troubled with dryness of the nasal chambers and pharynx as long as he could remember, and especially since his tenth year. No history could be elicited of the usual diseases of childhood, he was abstemious in his habits, presented no evidences of syphilis and except for nasal catarrh in his mother and to some extent among the individuals of her family, the history was negative. His chief complaint was the presence of an intensely fetid nasal odor which at times became so marked as to be commented on by those associated with him, and which at such times prevented him from attending to social duties. In addition to this the nose and nasopharynx would become blocked at least once during the day and especially on arising in the morning, with large greenish crusts which were removed with difficulty and frequently attended with nausea and vomiting. Objectively, the nasal interior was roomy and filled with greenish crusts, emitting to a most marked extent the odor characteristic of ozena. On removal of the crusts the turbinals were pale, atrophic in great part, but the lower on both sides presented a few isolated spots of relatively normal tissue; the pharyngeal wall being visible through both nasal chambers. The nasopharynx was covered with masses of partially dry and offensive mucus, while the pharynx was red, dry and sclerotic. In other words, the case presented the usual picture of atrophic rhinitis without involvment of the sinuses, that is so frequently seen. He had received treatment both by others and myself, but except for the relief obtained by cleansing of the nasal chambers several times daily, other measures such as citric acid, oil of mustard, the tampon with iodine, etc., seemed to have but slight temporary effect, unlike the results usually obtained in the larger number of patients suffering with a similar condition.

On April 18, 1902, he received a slight blow

* Read before the North-Western Medical Society, April 7, 1903.

over the right eye, only sufficient to barely break the skin, and within twenty-four hours erysipelas developed over the bruised parts and rapidly involved the entire face and neck. The features became unrecognizable, abscesses developed on each of the upper and lower lids and a portion of the lateral cervical glands suppurated. The mucous membrane of the nasal interior was also involved, while the pharyngeal mucosa became dry and fissured. The attack of erysipelas ran the usual course, remaining localized to the head, face and nasal chambers, and the patient was free from all symptoms of the disease by May 5. A careful examination of the upper respiratory tract was made a few days later and it was found that the ozena had entirely disappeared, the nasal mucosa was in part covered with but few crusts and easily removed, while the necessity for the frequent removal of the inspissated secretions had entirely disappeared. The lower and middle turbinals on each side were still shrunken, but they presented a more healthy appearance inasmuch as small areas of mucous membrane more nearly approached the normal. The nasopharynx and pharynx still being in part crusted and dry, but in no degree comparable to their former condition. No treatment was advised except occasional cleansing with an alkaline solution, as it was desired, in view of the favorable results produced by the erysipelas, to observe if the changes were permanent in character. At the present time, the nasal mucosa remains somewhat shrunken and atrophic in patches over the turbinals, but is elsewhere apparently normal and the healthy areas are increasing in size; the secretions are practically normal and while there is occasional crusting, it produces no obstruction and absolutely no offensive odor is discernible. The upper pharynx shows in a marked manner the improvement, as it is no longer dry, fissured and covered with adherent secretions, but while the submucous tissue remains atrophied, the epithelium has been fairly well restored and except for a slight degree of dryness due to the diminished secretion, it no longer is the source of the previous annoyance.

Several centuries ago it was noticed that erysipelas would occasionally favorably influence, and in some individuals, cure various pathological changes, but until recent years no advantages were taken of this phenomena, other than it was considered a favorable influence for an individual suffering from some form of malignant growth for instance, to become the subject of an attack of erysipelas, as there was the possibility of the amelioration or cure of the pre-existing disease. At present, numerous investigations have been made upon this influence of erysipelas, and no doubt can exist but that the disease has a distinct influence upon certain affections, although this favorable effect is not constant and does not limit itself to any special class of pathologic changes. Syphilographers, especially, have at various times noted the disappearance of certain of the local manifestations of syphilis when the affected parts were coincidently involved in an erysipelatous infection and convincing evidence from clinical experience has shown that not only has the general course of syphilis been modified, but also that indolent and suppurating buboes, have been favorably influenced.

Of other diseases which erysipelas has ameliorated or cured, there are numerous authentic reports: Powlowsky has seen local anthrax cured under these circumstances; Hebra and others have described the permanent cure of lupus nodules; Terson saw a case of advanced leprosy of the conjunctiva ameliorated, the leprous nodules for a time disappeared entirely; while Hessler reported a case of epilepsy with from 40 to 70 attacks a month, attacked with facial erysipelas and after the acute infection had disappeared, the convulsions practically ceased. It cannot be doubted that erysipelas has caused the permanent disappearance of various cutaneous tumors, carcinoma of the mammary gland, tumors of the lymphatic glands and epitheliomata and, as stated by Coley, this curative action is an established fact and is more powerful in sarcoma than in carcinoma.

While numerous instances of the amelioration of various affections by erysipelas have been recorded, its effect upon atrophic rhinitis has not been observed; a careful search of the literature revealing but two cases, both reported by a single observer—Francesco—and of but recent origin. The first was that of a young girl, with ozena of seven years' duration, which had resisted all treatment. Erysipelas incidentally developed, originating at a point near the nostril and involved the face. After the attack had subsided, the odor and crusts entirely disappeared, the mucosa recovered its normal appearance, and as three years later there had been no relapse, the case undoubtedly could be considered as a complete cure. The second case was that of a young woman with ozena of the left nostril, which had resisted treatment. While nursing a brother with erysipelas of the leg, she developed the disease on the lobule of the left ear, and with the experience gained by the previous case, the author scarified the cheek near the ala nasi in order that the nasal chambers should become involved. The erysipelatous process then affected the entire cheek and nasal chambers, and when the patient recovered there remained no trace of the ozena.

Since Busch, in 1866, observed in a woman with multiple sarcomata, the development of erysipelas following his attempts to remove the growths, with their disappearance as the result of the infection, a new light was shed on the subject, and numerous attempts have since been made to relieve various affections by the inoculation with erysipelas, its prepared streptococci or its serum. In relation to its therapeutic efficiency, the most favorable results have been seen from accidental infection, while next in value is the culture and finally the toxins as experimentally isolated, are lowest in the scale of practical value. The best results in malignant tumors at least are obtained from erysipelas itself, but Emmerich found in animals that the serum had a

restraining influence on tubercular lesions of the eye, and he was able by its use to cure splenic fever and malignant pustule in rabbits.

Of the more striking features presented by this case, the disappearance of the clinical symptoms of the ozena as a direct result of the erysipelas and the efforts at regeneration which have progressed toward a favorable histologic change, seem worthy of careful attention. The latter phenomena showing itself most strikingly by the islets of normal mucosa increasing in size and by the increased vascularity of the nasal interior, with its more normal secretion.

A suggestive thought in this connection is that of the influence exerted upon one bacterium by another; it being well known that in laboratory cultures, the presence of one bacterium will in many instances prevent the growth of another, and in view of the presence of the *Bacillus mucosus* ozena in the nasal chambers in some cases of rhinitis, whether bearing an etiological relationship or not it is impossible at present to say, it may prove of some interest should the bacteriologist determine the degree of antagonism between this bacteria and the organism of erysipelas. While one could hardly suggest that ozena should be treated by streptococcus cultures as a routine measure, yet in a small class of cases in which treatment has failed to control the ozena and in which the patient is obliged to desist from active business or social relations on account of the nasal condition, it would seem that the injection of Coley's fluid, for instance, would possibly be productive of some material benefits. At all events it would seem desirable to note the effect of intercurrent attacks of erysipelas upon a pre-existing atrophic rhinitis, and the careful study of such cases from this aspect may possibly be the means of elucidating some of these complex problems.

REFERENCES.

Hessler: Indiana Medical Journal, November, 1898.
Coley: American Journal Medical Sciences, January, 1895.
Montara de Francesco: Revue Heb. de Laryng. D'Otol. et de Rhinologie, March 8, 1902.
Nothnagel's Encyclopedia of Practical Medicine. American Edition. Erysipelas. 1902.

ESOPHAGOSCOPY.*

BY EDWARD A. ARONSON, M.D.,
OF NEW YORK.

LARYNGOSCOPY, oroscopy, cystoscopy and rectoscopy are all recognized aids for diagnostic purposes and it is my object to place the subject of esophagoscopy before you and claim a place for it alongside the above-mentioned clinical aids. If one takes up any book on clinical methods or diagnosis, he will find very little or no space given to this subject. Sahli, in his latest edition, says, "esophagoscopy, by means of the esophagoscope will be a very practical aid to diagnosis, but up to the present time the introduction of the instrument is too burdensome and too severe for the patient."

The idea of examining the esophagus by means of various instruments, originated with Störk in 1866, after laryngoscopy had been completely established. In 1868, Bevan described the use of an instrument for the examination of the esophagus. Waldenberg, in 1870, invented an instrument which came nearer to the modern one; for illumination a lamp, head-mirror and laryngeal-mirror were used. In 1880, MacKenzie began his examinations of the esophagus and in 1881, Mikulicz was the first to devise a long tubular instrument, the one end of which projected out of the oral cavity and thus did away with the use of the laryngeal mirror. He used a small electric lamp attached to a slender rod which ran along the inner side of the tube and illuminated the distant end. By the aid of this light, Mikulicz observed many interesting conditions, both in the normal and pathological esophagus. Leiter made improvements on the principle of the Mikulicz esophagoscope, and von Hacker then began to use it.

Since then, most esophagoscopes have been constructed on the ideas of the last mentioned authors, with but slight modifications. Some clinicians use the Casper electroscope for illumination purposes, that is, the illumination is kept at the upper or outer end of the esophagoscope. Störk modified the Mikulicz instrument by making a flexible end to it of jointed steel rings, which after introduction and with the patient in proper posture, resumes its straight position; there are, however, no advantages in its use. Kelling has also devised such an instrument, which in its entire length is made up of steel joints.

We now come to the modern instruments, from the more simple one of Rosenheim to the most recent one of Glücksmann. Rosenheim devised an instrument which differs slightly from that of von Hacker and that of Mikulicz. I will describe the Rosenheim instrument as follows: it is a smooth metallic tube, 11.5-13 mm. in diameter, and may be of any length between 22 and 50 cm. The distal end is slightly thickened and made dull, and to this end is fixed a soft rubber tip attached to a rod called the mandrin, introduced into the tube; this rubber tip makes the introduction of the instrument less dangerous. When the instrument has been completely introduced, the mandrin with the rubber tip is withdrawn and a Casper electroscope is attached to the outer end of tue tube. The eye is placed to this end of the tube and by means of the electrical illumination, the esophagus in part, after sponging away whatever mucus or blood there may be present, is brought under immediate observation. The tube on its outer surface is marked off by a centimeter scale, which enables one to see how far he has entered the esophagus.

Einhorn also devised an esophagoscope with a miniature electric lamp at its lower end; this instrument he exhibited before the Medical Association of Greater New York in December, 1901. Schreiber invented a more complicated tube,

* Read before the American Medical Club of Berlin, Germany, Feb. 28, 1903.

which has a second much thinner tube attached, through which the mucus can be withdrawn and thus do away with sponging. Glücksmann, early this year, demonstrated an instrument on the Rosenheim principle, but which, in addition, had a rubber ring at its lower end that could be inflated from the upper part; this allowed a greater separation of the esophageal walls and thus afforded a larger field for observation. He has the lamp at the upper or outer end of the tube, objecting to the light at the lower end because if the lamp becomes covered with pus or blood the illumination is obscured.

The position of the patient is a very important consideration for the introduction of the instrument and each clinician has his favorite position and favorite instrument. Einhorn used his own instrument with the patient in the sitting posture; Störk, with the old instrument, always had the patient in the sitting posture; Mikulicz places his patients on the right or left side; von Hacker allows his patients the dorsal position; Boas, the sitting or horizontal posture, and Rosenheim always preferably uses the horizontal position.

Before introducing this instrument, the patient's general condition must be examined and all constricting clothes removed. If there are no contra-indications, such as I shall mention further on, to its introduction, then the whole posterior portion of the oral cavity is well anesthetized, with a 10- to 20-per-cent. cocaine solution or a 3-per-cent. eucaine solution; formerly, a hypodermic injection of morphine preceded the introduction of the instrument. Most clinicians precede the use of the esophagoscope by the introduction of a sound and Kraus lays especial emphasis on this point.

Mikulicz in his early work with the esophagoscope, described the esophagus as having three different motions, all visible by means of this instrument: Respiratory—during expiration an approximation of the walls and vice versa in inspiration; pulsatory—seen at the bifurcation of the trachea and extending downward, because of the close proximity to the heart; peristaltic, which is less frequently seen. The normal mucosa of the esophagus is very pale red in color and very smooth. Under pathological conditions, the surface alters its appearance and color and the vessel injection, especially in inflammatory conditions, is very easily recognized.

Although the instrument affords such advantages in diagnosis, its introduction in some cases is attended by some disadvantages, among which may be mentioned, (1) patients unable to open the mouth widely and the presence of the incisor teeth; (2) hypersecretion of mucus; (3) entrance of some secretion into the larynx, followed by cough; (4) vomiting; (5) diminished flexibility of the cervical vertebræ; (6) acutely convexed tracheal cartilages; (7) unrest of the patient.

The length of time necessary for the examination of a patient with the esophagoscope depends upon its effect on the patient and the local condition; in fact, an examination need never last more than three minutes, and, if necessary, may be repeated several times, always allowing a few days between each examination. It need hardly be necessary for me to say that the instrument should be immediately withdrawn in case there is a marked hemorrhage. It is hardly possible to make such an examination without assistance, as some one must support the head of the patient. Esophagoscopy is attended with but one serious danger and that is, perforation; this, fortunately, has been a very infrequent occurrence. The indications for esophagoscopy are: (1) To note the site and character of foreign objects within the esophagus; (2) to recognize local lesions, such as erosions, ulcers, etc.; (3) to note the character of an obstruction, if one is present; (4) to recognize new growths, benign or malignant; (5) to recognize a diverticulum, though this is not easy; (6) for differential diagnosis between organic and functional conditions of the esophagus; (7) last, but most important, for therapy, such as the extraction of foreign objects, local treatment of ulcers, erosions, etc.

Among contra-indications may be mentioned, nervous patients; debility; patients with short thick necks; marked emphysema and dyspnea; myocarditis and uncompensated heart lesions; aneurism and arteriosclerosis; kyphoscoliosis; liver cirrhosis with tendency to hemorrhages; acute inflammation of the esophagus.

When anyone for the first time is about to see an esophagoscopy performed, he always asks himself, Can such a barbarous looking instrument be easily passed and what is the effect on the patient? No matter what the posture of the patient is, whether sitting, on the side or horizontal or on the back, in every case the head is thrown as far backward as possible, which makes the esophagus more or less straight and favors the passage of the tube. The effect on the patient varies with the individual; some patients submit very quietly and suffer no very unpleasant results, and others struggle, become cyanotic, breathe laboriously, and require more or less moral anesthesia to quiet them. The after-effects may be some slight intrathoracic pain, which gradually and rapidly passes away. Many a patient will readily endure considerable inconvenience, pain and marked cyanosis if the foreign body be withdrawn from the esophagus through the tube; the physician, on the other hand, will feel more than gratified, when he notes the diminished respiratory motion of the esophagus wall, due to its infiltration, the presence of a little pale prominence with or without a bleeding point, that he has made diagnosis of carcinoma.

Esophagoscopy to-day is practised most frequently in Germany in but two clinics, at that of Mikulicz, in Breslau, and at that of Rosenheim, in Berlin, where I have had the opportunity of examining a large number of cases during the past months and to form an opinion as to the advantages of esophagoscopy. To get simply an idea of what really has been done by esophagoscopy, one need but read the excellent monograph of Gottstein on the subject.

It would not be quite fair for me to say that this method of examination has found universal satisfaction and while it has its ardent admirers, it also has others such as Ewald, Boas, and Kuttner, who hesitate longer in its employment for diagnosis and say the latter should be made without the instrument and without subjecting the patient to it; which, after all, are but insufficient arguments against its use. Kraus says, "Esophagoscopy without doubt is of great diagnostic value, more valuable perhaps in the hands of the surgeon because of its therapeutic indications." Mikulicz in the preface to Gottstein's monograph says, "The esophagoscope not only allowed us to view well-known clinical pictures better, but has directly brought before our eyes conditions which heretofore were unknown or but poorly recognized and falsely diagnosed. Up to the present time, the one control for a clinical diagnosis was the post-mortem examination but all cases do not come to autopsy and esophagoscopy offers another control."

Formerly a skeptic, I have been completely won over to the use of this instrument and there is no doubt in my mind, that the esophagoscope in the hands of a careful observer who knows how to correctly interpret what he sees, is a most valuable aid to diagnosis.

LITERATURE.

1. Sahli: Klinische Untersuchungsmethoden, 1902.
2. Störk: Wiener med. Woch., 1881, No. 8, 1887, No. 34; Wiener klin. Woch., 1896.
3. Bevan: Lancet, Vol. I, April, 1868.
4. Waldenberg: Berlin. klin. Woch., 1870, No. 48.
5. Mackenzie: Erkrankung des Halses, Bd. II. S. 23. From the German by Semon.
6. Mikulicz: Wiener med. Presse, 1881, No. 45.
7. Von Hacker; Heitles Centralblatt für die gesammte Therapie, 8. Jahrgang, I. Heft, Januar, 1890; Die Esophagoscopie u. ihre klinische Bedeutung. Beiträge zur klin. Chir. Bd. 20, 1898, p. 141; Die Esophagoscopie beim Krebs der Speiseröhre u. des Mageneingangs, *ibid.*, p. 275; Ueber die Entfernung von Fremdkörpern aus der Speiseröhre mittelst der Esophagoscopie.
8. Kelling: Allgemeine med. Centralzeit., 1896-8; Archiv. für Verdauungskrank., Bd. III; Münchener med. Woch., 1897-8.
9. Rosenheim: Berlin. klin. Woch., 1895-6; Deutsche Med. Woch., 1895-7-9; Allgemeine med. Centralzeit., 1895; Verhandlungen deutscher Naturforscher u. Aerzte XVIII. Versammlung, 1896, Therapie der Gegenwart, 1899; Zeitschrift für klin. Med., XLI. Band.
10. Ebstein: Ueber Esophagoscopie, Wien., 1898. Bibliothek der gesammten med. Wissenschaften von Hofrath Drosche, 206. Lieferung, Chirur., 14. Heft, S. 623.
11. Killian: Münchener med. Woch., 1900, No. 4.
12. Schreiber: Ein esophagoscop. Archiv für Verdauungskrank., Bd. VIII, Heft 3.
13. Glücksmann: Berlin. Klin. Woch., 1903, No. 4.
14. Einhorn: Inspection of Esophagus and Cardia, New York Medical Journal, Dec. 11, 1897.
15. Gottstein: Technik und Klinik der Esophagoskopie, 1901.
16. Kraus: Die Erkrankungen der Speiseröhre, 1902.
17. Ewald: Berlin. klin. Woch., 1902, No. 11.

INDICATIONS AND COUNTER-INDICATIONS FOR PROSTATECTOMY.*

BY L. BAZET, M.D.,
OF SAN FRANCISCO, CAL.

NOT long ago, the medical profession thought that in perineal prostatectomy, a radical method had been found for the cure of hypertrophy of the prostate; many operations were performed the world over, each operator recorded his cases, and medical newspapers were full of this literature. Now it seems that after the enthusiasm of the first moment, more reflection is exercised, and we do not hear of so many prostatectomies performed. Discrimination has been made. Experience has sanctioned operation in only those cases that give assurances of a probable good result. To facilitate the selection of these operable cases, the writer of this paper submits to you what he considers the indications and counter-indications for prostatectomy.

In the pathogeny of the accidents of prostatism, many factors come into play. In stating that the hypertrophied prostate plays the most important rôle, I must submit that there are individuals who have for many years a very large prostate without being troubled. Notwithstanding this contradictory fact, the prostate is often the first pathological factor. Under the influence of its hypertrophy, the bladder is disturbed in its function, the urine does not flow through the urethra with the same freedom, and then begins the vesical evolution of perturbation, which is first acute, then intermittent, then chronic retention. Vesical contractility will become weaker from day to day and at the end of a period, varying generally from eight to ten years, the patient will arrive at the condition of complete and definite retention. At that time the catheter life and its attendant miseries begins and ultimately conduces to the death of the patient. During all this time the necessity of catheterization exposes the patient to the accidents of infection.

Prostatism is made of all these combined, associated and blended elements, and when the responsibility of treatment has to be assumed for a prostatic patient, it is necessary to make a complete examination and to establish a precise diagnosis. The observations must be related in detail, the group of symptoms disassociated, the succession of accidents established, and those relating to each organ carefully analyzed. Without these precautions, there is risk of performing an unjustifiable and useless operation, or, at all events, of failing to obtain the hoped-for result.

To make a complete diagnosis of prostatism, it is necessary to analyze the individual, the apparatus, and the organ. Concerning the individual, that is, the heart, the lungs, the arteries, etc., there is here nothing special to be said. As to the urinary apparatus, the kidneys above all are to be examined. The polyuria, the turbid urines, the great deposits, the vague symptoms of Brightism, all the signs of these should be searched. They have a great prognostic value, but their research does not offer any special particularity. With the prostatic, it is the examination of the organ that most interests us, and by organ, I mean the prostate and the bladder. It is to that examination that we must bring great precision, because upon it depends the selection of the operation to be performed.

For the examination of the prostate, many means of unequal value can be utilized. First, the rectal touch: it must be made with an empty bladder, otherwise the prostates, spread by the vesical extension, all appear increased in size.

* Read before the California State Medical Society, April, 1903.

The rectal finger shows the volume of the prostate, its length, its width, its firmness, its consistency. Notwithstanding that these informations are very vague: there are some prostates with rectal evolution that are not large. They are felt by the rectal touch. There are others with vesical evolution that are large and are not felt by the rectal touch. Besides, the rectal touch does not give sufficient information concerning the volume of the prostate. It is only an indication, but, if we combine the abdominal palpation with the rectal touch, it will be easy to gain the conception of an interposed volume, more or less great, depending upon the size of the prostate. Each lobe is to be palpated successively and its relative volume appreciated. However, this is possible only with lean individuals; with corpulent prostatics whom we frequently see, we must employ other methods.

It is then that catheterization intervenes to give us information of the highest precision. The olivary explorator and the bi-coudee sound give us positive data on the volume of the prostate. They make us know the existence of a greater or less prominence on the posterior wall: they show sometimes by the stop they undergo at this level that there is a cul-de-sac of depression with a bar above, but over all they show, by the depth to which they penetrate what is the length of the prostate, and the length of the prostate is in direct ratio to its volume: the more it increases, the more it lengthens. Its superior face is pushed toward the abdomen by the hypertrophy, and the length of the prostatic urethra, which in the normal state is 27 millimeters, reaches a length of 4, 5, 6, and even 7 centimeters. Consequently, to draw the urine off, the sound must penetrate that depth, and an experienced eye can judge of the volume of the prostate by the depth to which the sound has to penetrate.

The metallic explorator confirms these data in two ways: by the depth it attains, it shows the length of the prostatic urethra and besides, by lowering the handle, the elevation of the neck of the bladder is ascertained. The more voluminous the prostate the more will the neck of the bladder be elevated. This is a general law from which the prostate cannot escape. Placed at the inferior part of the pelvic cavity, the prostate cannot enlarge downwards on account of the ischio-pubic rami. Upwards, on the contrary, and there only, it is free. Hence, when the hypertrophy takes place, the prostate rises more or less towards the umbilicus and carries with it the vesical neck, consequently the vesical neck will be pushed upward directly as the prostate is enlarged. But, when the neck of the bladder rises, the bas-fond becomes depressed and the depression of the bas-fond is in proportion to the degree of the hypertrophy. Now, then, this depth of the bas-fond will be shown to us by the metallic explorator.

When the metallic explorator is introduced, if with it you can execute a complete circle of the neck it is because the prostatic pouch exists. In addition to this, by exploring to the right and to the left of the neck, you determine to what extent the right and left lobes of the prostate project into the bladder and, owing to a median obstacle, you can discover the existence of a senile or pedunculated lobe. Thus a series of precious notes are furnished by the intervention of only an instrument commonly used in the search for vesical calculi.

We have another means of determining the intravesical projection of the prostate, *i.e.*, cystoscopy. The cystoscope confirms the data established by the means I have already mentioned. Depth of the bas-fond, median or lateral projections, these conditions are again demonstrated by the cystoscope.

These are the means that permit us to define the exact state of the hypertrophied prostate. Before making a decision, it is necessary to know and appreciate the condition of the vesical muscle. The study of the urinary residuum gives us the nature of its contractility. When the bladder empties itself completely, it is because its contractility is intact; when it empties itself partially, it is because it is already in a state of inefficiency; but when it does not empty itself at all, when the retention is complete, it must not be concluded that the contractility is completely lost: on the contrary, even in these cases, it is rare that the vesical contractility is entirely abolished. It appears that even in complete and chronic retention, the vesical muscle aided by the catheter, has more vitality than in the chronic and incomplete retentions where the patient, neglectful of the catheter, aids less willingly the contractility of the vesical muscle. When the bladder is filled with water and the catheter remains in place, we can judge of the vesical contractility by the intensity of the stream of the liquid column. A manometer is not necessary, as this simple exploration is sufficient. When all these facts are known, it is possible, I think, to weigh with certainty the indications and contra-indications for the treatment.

The indications for prostatectomy are based upon conditions that vary according as the patient labors under the first, second, or third period of prostatism.

In the first period, when only dysuria and nocturnal frequency exist, prostatectomy ought to be postponed. At that time the operation would be somewhat extreme, and I do not see any trouble that may arise by waiting until the period of more serious complications. I see, on the contrary, the advantages of this prudent expectation. But when we find acute retention, which is the first indication of the failure of the vesical muscle, then the question of the operation presents itself again, and this time the operation appears to me to be perfectly indicated if the prostate is large. With a large prostate, congestive attacks will surely return, the retention that has begun will be more pronounced. If it be true that all methods for relief have, in this condition, given extraordinary success, perineal prostatectomy can-

not be inferior to any. The operation reaches the obstacle, which is the prostate; it alone removes that compression made by the lateral lobes upon the lumen of the urethra. Consequently the bladder, freed from this initial primary obstacle, has no more reason to be subsequently disturbed nor its muscular function further weakened. Results will some day show that the patients who have been a long time under observation and subjected to operation at this initial period, have been definitely cured. But, if I reason thus for a large prostate, I will be more circumspect regarding a gland of small volume. Notwithstanding the acute accidents, if the prostate is small, we can wait, and I believe it is better to await under a prudent and vigilant supervision, the manifestation of more serious difficulties.

When the patient has arrived, after a more or less prolonged period of miseries, at the stage of chronic and complete retention, prostatectomy will almost always be indicated. It is then that it will give its best results. Although the vesical contractility appears lessened and even abolished, and although the patient is unable to expel even a few drops of urine, the prostatectomy, by removing the obstacle will permit these patients to urinate spontaneously and sometimes even to empty their bladders. In these cases the obstacle whether it be large or small is the important causative element. If the indication for prostatectomy is indisputable at this period for a large prostate, it is equally so for a small prostate if vesical sclerosis has not been known to be the primary factor in the process. The diagnosis of these cases is, moreover, very difficult to make; and I believe that the doubt ought to be on the side of the operation. I may say willingly that at this stage the operation meets only counter-indications which further on I will mention.

At last the patient reaches the period of incomplete and chronic retention. He has a residue of three to six ounces: he uses the catheter two or three times every twenty-four hours. Should we operate under these conditions? Yes, if the prostate is large. The operation is justifiable because there is chance of improvement, but we must be wisely conservative, because it is these bladders, sclerosed by cystitis, and whose diminished power is imperfectly supplemented by the catheter, that furnish the majority of failures in prostatectomy. Before the operation, the residue was three ounces —it remains the same after. Before the operation the catheter was used three times a day—after, it is necessary to use it the same number of times. The patient has lost his prostate and his condition has not been improved. On these patients I consider the indication of an operation only when there is a large prostate. I attach a great importance to the volume because with the marked enlargement we have the best chance to obtain a good result.

Another indication for prostatectomy in these patients is shown by the presence of calculi which notwithstanding previous lithotrities, continue to recur with the same disheartening persistence. With these patients the prostate is the indirect cause of the relapse. That organ, by elevating the neck of the bladder, forces the depression of the bas-fond and induces calculi to lodge there; that organ, by forcing the retention invites the agglutination of the infected residue, and the formation of calculous concretions. Hence, instead of crushing through the urethra, a calculus where the conditions of production are not modified, I think it more surgical to reach the bladder by the new perineal operation, to remove the prostate and afterwards the foreign body, thus at the same time disposing of the calculus and the condition determining its formation.

But prostatectomy has also its counter-indications, and it is not a paradox to say that, in determining the course of treatment, counter-indications more than indications have to be borne in mind. The consideration of a slight operation on an aged, fatigued person, with all his organs and apparatus impaired, may find in the state of the individual, elements of the highest gravity. Age constitutes the first counter-indication. Beyond seventy-two years, chances of success of operation diminish considerably, and as prolonged life cannot be expected at that age, benefits of the operation are proportionately decreased.

Infection is another factor that pleads against the operation. Here, however, we have to understand each other. The infection is more or less constant with the prostatic, but it can be vesical and remain chronic. But, when it is accompanied by acute congestion and fever, and at the same time there exist chronic lesions of sclerosis and renal infection, the operation presents dangers that ought to defer it to another epoch, and oftimes postpone it indefinitely.

MORAL INSANITY OR DEGENERACY.

BY F. H. STEPHENSON, M.D.,

OF SYRACUSE, N. Y.;

NEUROLOGIST AND ALIENIST TO SYRACUSE HOSPITAL FOR WOMEN AND CHILDREN; THE SYRACUSE FREE DISPENSARY; THE ONONDAGA COUNTY AND ST. VINCENT'S ORPHANAGES; MEMBER OF NEW YORK STATE SOCIETY; PRESIDENT ONONDAGA COUNTY MEDICAL SOCIETY; CENTRAL NEW YORK MEDICAL ASSOCIATION; SYRACUSE ACADEMY, ETC.

IT is agreed among modern writers and observers along psychological and neurological lines that there exists in mankind marked mental disorder with great moral disturbance, yet with the intellect fairly developed and often unaffected or brilliant.

The description of this form of degeneracy is given thus: "A person, who may be educated, cultivated, have a good memory, do many kinds of work well, may even be a genius, but is strongly emotional, unstable, lacking in judgment and reason. Precocity or disequilibration being often marked in some of these patients, the phenomenal mimics, mathematicians and child pianists often come under this heading. In others, the ethical feelings are changed; they lack self-control, giving way to sprees, immorality and other excesses,

and we hear of them periodically taking the gold-cure or recruiting in sanitariums and other health resorts. Often the animal propensities override the intellectual power, as eroticism and sexual perverts, they step mentally and morally over the border line of recognized decency and sanity and then they pass to the criminal or imbecile class, to which they are closely allied. Examples of this type are brought to our notice constantly, either in our professional, business or social relations, or through the daily press.

It is encouraging that these degenerates are being more and more recognized and studied and will receive greater consideration and sympathy as time goes on, and the general public becomes enlightened through our instrumentality, as students and observers, and as our conclusions are given to scientific bodies, to clubs, to the press, and on the witness stand, where we are liable to find ourselves at any time, endeavoring to protect the degenerate from the punishment which should be meted out only to the criminal. This latter class should be looked at from the standpoint of its nervous organization, as usually unstable, and quite prone to develop suddenly mental diseases. In some of these cases anatomical stigmata are well marked, viz.: the ill-shapen and prominent ears, cranial deformity or asymmetry, lanky figure, gothic or flat, broad palatine arch, widely separated and irregular teeth; anomalies of the skin, genitalia, etc. In others, the physiological stigmata may be present, consisting of anomalies of the motor and sensory functions of speech, appetite, motion, gait and sexual derangement. Nutritive and circulatory disturbances are frequently observed, also vasomotor symptoms. The psychic disturbances of degeneracy consist of insanity, idiocy, imbecility, neurasthenia, prostitutions, the criminal class, hysterias, epileptics, feeble-mindedness, precocity, eccentricity, moral delinquency sexual perversion and those with poverty of ideas. These people have little self-control over their emotions; they are lacking in reason and judgment and are so sensitive and suspicious that they cannot adapt themselves to their families or employers, their circumstances or surroundings. They are erratic, impulsive, easily moved to tears, fearless or timid, and eccentric, but especially are they lacking in mental balance, that quality which man must possess to a great degree to make a success in life, and to go safely through its trials and vicissitudes. When young and protected by their family or guardians, many of these patients exhibit only a deficiency in moral sense. They may be capable of receiving an education, culture or acquiring a trade; but with the strain and trials of later life their moral nature shows its weakness, if not a state of depravity. Their emotions may become depressed or exalted and they become so agitated that they commit suicide or homicide, their emotional explosions, like those of epilepsy, often bring relief, and they relapse into their normal condition.

Dana says about two per cent. of normal men have the stigmata of degeneration, but man is not considered a degenerate unless several of these deformities are manifest.

According to law they are conscious of right and wrong, and thus they are held legally responsible. Medical men, who study these degenerates, recognize their inability to control their strongly perverted emotions, or the temporary manias or melancholias, which are easily developed in such neurotic soil. These patients are accomplices or perpetrators of sin and crime, but they should be understood and dealt with from their proper standpoint, and they and their families saved from the disgrace which so often befalls them. They may have been considered odd or eccentric, but not until they have committed some criminal or immoral act, or present symptoms of acutely ingrafted insanity, do their friends think of their having always been a little insane, especially at periods, resulting from various exciting causes, as grief, worry, insomnia, excesses, illnesses, or physical debility. The patient then comes under our care and study and we recognize a degenerative psychosis with a latent acute insanity. These cases of degeneracy vary greatly, presenting every shade or mental blemish from morbid ideas, manners and customs to the criminal class and idiocy. But the variety which I wish especially to dwell upon is the one often met with and which frequently puzzles mankind. The one which can be managed with the greatest difficulty and which receives the greatest injustice.

A man of this class was recently tried in the Onondaga County Court for murder. As a child, we learn, he was bright and enjoyed study, but was shy, fond of being along, reading 'way into the night, sleeping but little, was self-willed, uncontrollable, and having constant altercations with his teachers and family. At eighteen years of age he became melancholic and attempted suicide, but failed in the attempt. For the next eighteen years he lived in thirty-six cities, in Europe and America, working for a large number of employers; in fact, constantly vacillating from place to place and from city to city. Few of his reasons for these frequent changes being sufficient, according to the opinion of a man of average thrift, reason and judgment. During this latter period of eighteen years he has twice attempted suicide, while having recurrent attacks of depression. The history of his manners, customs, habits and ideas, as elicited from himself, his relations, his fellow-workmen and employers, shows he was erratic, quick-tempered, easily influenced, unstable, sensitive and suspicious; he entertained socialistic views of life and considered suicide right, if one were unhappy or made a failure in life. He has a good memory and is fond of our best literature; in fact, is educated and intelligent in many ways beyond the average workman. Another peculiarity is that he should fit himself for such a position as a dyer and cleaner of clothing, when educational advantages were offered and urged upon him, and his family were educated people who held and still do hold good social and busi-

ness positions and relations. These tendencies all suggest a perverted, unbalanced and unstable mental condition. Heredity is a potent factor in this class of cases, the family taint being of course greater the larger the number of ancestors and relations afflicted with nervous and mental diseases, as the various neuroses, epilepsy, consanguinity, alcoholism, drug habits, and the various insanities. Such an inheritance is bound to afflict some of its posterity or relations with degeneracy, if nothing more serious. The man referred to comes from a family of neurotics. His mother is eccentric, his sister a paranoiac, an aunt is a meloncholiac, and an uncle and cousin both suicided while suffering from the latter disease. Another cousin is a feeble-minded epileptic. His other brothers and sisters are thus far free from mental disease, while he, poor fellow, has been a "ne'er do well" throughout his life and will continue in this condition, as it is incurable, unless he drifts into some more serious mental disease, which very often develops from this primary condition of degeneracy.

It is important that this condition be recognized in early childhood, and early training, discipline and example exert a beneficial influence. The precocious child should not have especial attention given to his one-sided talent. He should be developed along the line of his *general* ability. Especially should all young children who are self-willed be taught obedience and to think before they act. These points are as necessary to their success in all departments of life, business or social, as the culture, education and business training which we parents and educators are so desirous they shall obtain. Self-poise and self-control are of great advantage throughout life, and very much of this must be cultivated and developed in the home, and especially is this training due to the child who shows a nervous, excitable temperament or one who comes from neurotic ancestry.

My closing wish and thought is that we study more and more these degenerates, educate the public regarding them, and then protect ourselves from their uncertain, emotional movements, and endeavor to protect these unfortunates themselves from the special trials which so easily cause them to lose mental equilibrium, when they are liable to commit some rash deed for which they are not mentally accountable, but for which our laws hold them responsible, unless they show other evidences of insanity which are so marked that a layman can easily recognize them. Then, if they escape the criminal's chair, they only escape to go to the hospital for the criminally insane. Is it not our duty as physicians and observers to educate mankind in general regarding the dangers and expectations from heredity and the lack of self-control throughout life?

The degenerate must be considered solely upon the mental, moral and physical stigmata which brand him as an abnormal or atypical man, and prevent him from exerting himself to the highest limit commensurate with his skill and development.

MEDICAL PROGRESS.

MEDICINE.

Meningitis Without Anatomical Lesion.—It sometimes happens that patients die very acutely with all the symptoms of a severe meningitis and yet only a slight exudate and perhaps a moderate degree of swelling and hyperemia of the brain is found post mortem to account for the condition. The case of BIRNBAUM (Münch. med. Woch., July 21, 1903) is peculiar, however, in that the patient was ill for fifteen weeks and that absolutely nothing was found post mortem in the meninges. Bacteriological examination, however, revealed the presence of meningococcus, and the cerebrospinal fluid withdrawn during life showed a slight coagulum, which always is suspicious. The case must therefore be looked upon as one of meningeal sepsis without anatomical lesion. The cause was probably a gum-boil which had been incised with extraction of the diseased tooth, two days before the acute onset of the illness.

Sepsis Caused by the Diphtheria Bacillus.—Diphtheria is a disease which leads to intoxication rather than to infection and there are only one or two cases on record where the germ was really found circulating in the blood. The case of ROOSEN-RUNGE (Münch. med. Woch., July 21, 1903) is of exceptional interest since the patient originally suffered from another disease. He came to the hospital with a consolidation on one side followed by an empyema in which pneumococci occurred in pure culture. After resection of a rib, the temperature dropped and the patient seemed to be convalescing, until six days after the operation, when the exudate became hemorrhagic in character and fluid appeared on the opposite side with renewed rise of temperature. The course of the disease was now steadily downward, with high fever and dyspnea. The bacilli grown from the blood had all the characters of diphtheria bacilli except that they were not pathogenic to animals. This does not, however, prevent the author from pronouncing the case as one of diphtheria sepsis, probably taking its origin from the wound in the pleura.

General Sepsis Caused by the Pneumobacillus.—A patient apparently suffering from sepsis with marked involvement of the lung was observed by F. JENSSEN (Münch. med. Woch., July 21, 1903.) Other prominent symptoms were an enlarged and tender spleen, albuminuria, very rapid pulse and remittent temperature with only a single chill. From ten cubic centimeters of blood taken from the cephalic vein, abundant growths of the Friedländer bacillus were obtained. The patient died after a week and at autopsy there were found pleuritis, multiple foci of consolidation in both lungs, abscess in the kidneys, abscess of the liver perforating into the free peritoneum, diffuse purulent peritonitis, splenic tumor and cloudy swelling of the heart, liver and kidney. The portal of entry could not be ascertained, the infection might have taken place from the lungs or tonsils though the patient's history seems to point to a gastro-intestinal origin. The Friedländer bacillus has been found in purulent inflammations of almost all organs of the body, yet cases of general infection are rare and reports on positive blood-cultures are still more infrequent in literature.

SURGERY.

A New Incision for Resection of the Appendix.—The new incision of E. BEER (Centralbl. f. Chirurg., July 25, 1903) is a modification of the one recommended by Gerster, and does not injure the posterior sheath of the rectus. The skin is incised directly above a line which connects the navel with the middle of Poupart's ligament, about 1 to 2 centimeters mesially from the

outer edge of the right rectus; in length the incision should not be more than 3 to 4 centimeters. The rectus is then pushed inward, when the semilunar fold of Douglas and the inferior epigastric artery come to view. Now the peritoneal cavity is opened directly beneath the semilunar fold and external to the inferior epigastric artery. The risk of a subsequent hernia is thus reduced to a minimum. Should the opening prove too small, it is still possible to open the posterior sheath of the rectus. The peritoneum is finally closed by means of a continuous catgut suture, the anterior sheath with chromicized catgut or silk, and the skin with silk or adhesive plaster.

NEUROLOGY.

The Pathogenesis of Acute Psychoses.—This has long remained one of the unsolved problems of psychiatry and none of the numerous theories advanced have stood the test of experimental trials. The view which has lately met with the most support is that these phenomena depend on delicate chemical changes in the cortical cells, which occur without the production of any morphological alterations in the cells themselves. In this way the theory of a circulating toxin in the blood has gradually gained credence. Experimental proof of this theory has been sought by H. BERGER (Berlin. klin. Woch., July 27, 1903). The first of these trials were performed by the author on himself. He injected at intervals serum, blood and cerebrospinal fluid from a patient suffering from acute dementia with hallucinations, without the least effect. This seems to show that the toxin, if present, must already be firmly united with the cerebral cells before the acute symptoms appear. In the belief that the toxin may have been found during the prodromal stage, the author also injected subcutaneously blood from a patient who was developing symptoms during her puerperium, which later turned out to be a dementia precox. No effect was seen, but blood taken from the same patient four weeks later, during a fresh attack, and injected, was shortly followed by vertigo, and later by cardiac palpitation, cerebral pressure, and a marked feeling of fear. All these symtoms subsided on the following day. A similar experiment with the blood taken from a more advanced case in a condition of stupor at the time, was also followed by results which were much more marked and severe and did not subside for a week. The experiments were then continued on animals and a basis secured for further investigation in regard to the changes which specific toxins contained in the circulating blood may cause in the central nervous system. The details are not suitable for a brief abstract. They consist mainly of observations made with the serum secured from the goat which had been made neurotoxic for dogs, by the continued subcutaneous injection of triturated cerebrum from the brains of dogs. Intracerebral injections of this goat serum in dogs was followed by well-marked pathological changes in the pyramidal cells of the cerebral cortex and later on a large aggregation of leucocytes around these degenerated cells. Similar pathological conditions have been found in patients afflicted with acute psychoses and also in other cerebral diseases, but the author is not as yet prepared to draw final conclusions until further proof has been secured.

PHYSIOLOGY.

Rapidity of Growth and Length of Life.—That the span of life of the mammalia is related to the rapidity of growth, was first pointed out by Buffon and later by Flourens, according to G. v. BUNGE (Pflüger's Archiv, Vol. 95, Nos. 11 and 12). They expressed this relationship in a numerical ration, Flourens finding this to be 5, although Buffon thought it was 6 or 7. That is, the number of years it takes to reach adult life, multiplied by 5 would give the duration of life. These observers found the age of maximum growth to be the period at which the epiphyses and diaphyses of the long bones unite. The author, in the course of an investigation on the relationship between the composition of milk and rapidity of growths in the various mammalia, had the opportunity of determining the time it takes the animal to double its birth-weight. The results were tabulated in a series as follows, the numbers referring to days: man, 180; horse, 60; ox, 47; sheep, 15; hog, 14; cat, 9½; dog, 9. This order is exactly the same as that given by Flourens for the period of attaining maturity, tabulated in years, as follows: man, 20; horse, 5; ox, 4; sheep, —; hog, —; cat, 1½; dog, 2. The average duration of life, as given by this author, in years, is as follows: man, 90 to 100; horse, 25; ox, 15 to 20; sheep, —; hog, —; cat, 9 to 10; dog, 10 to 12. From the last two series it appears that the factor 5 of Flourens is not exactly correct. In the determination of the average duration of life there must of course be excluded all these cases in which life is cut short or shortened by accident or disease. To the author it appears that there must be some other functional relationship between the two variables, length of life and period of growth, than the mere numerical relationship, and that even this numerical law might be deduced from some other more general law. At any rate the author is convinced that there is a law of relationship between period of growth and length of life and that the exact determination of this law would be of eminent interest.

The Coagulability of the Blood of Asphyxia.—Carbon dioxide does not exert in vitro, according to M. CARRARA (Archives Italiennes de Biologie, June 10, 1903), any anticoagulating action upon the blood of asphyxiated rabbits or dogs, but seems to favor coagulation. In fact the blood of such animals coagulates in the test-tube more rapidly than normal blood, which phenomenon is all the more marked the longer the asphyxia has lasted. This accelerated coagulability is to be attributed to the large amount of Ca-ion rendered active by the very conditions of asphyxia (formation of bicarbonates). The osmotic pressure of the blood increases during this condition: but slightly, when it is caused by the sudden or gradual occlusion of the trachea, and markedly when it is produced by CO_2 and respiration in confined air.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

Pathology of Beginning Prostatic Hypertrophy.—Considerable confusion reigns as to the real pathological changes which underlie hypertrophy of the prostate. In order to observe these in their incipiency, A. ROTHSCHILD (Virchow's Archiv, Vol. 173, No. 1) carefully sectioned thirty glands from patients thirty to fifty years old, not suffering from acute infections or constitutional disease or of inflammatory affection of the genito-urinary tract. He found the following changes: (1) Glandular tissue. The glands were dilated and their walls less convoluted. Pathological contents—chiefly pus cells and desquamated epithelial cells, with detritus and amylaceous bodies—were found in nearly all and where the lumen was filled, the epithelial lining was converted into a single layer of cubical or flat cells. (2) Connective tissue. Foci of small, round cells in a process of cell division were frequently encountered in the stroma; their number and location varied considerably, but they were rather frequently found encircling a pathologically altered gland. The blood-vessels and muscle-fibers did not participate in the changes. The lesions of prostatic hypertrophy must thus be classified under chronic inflammation. It is probable that the newly-formed connective tissue com-

presses the gland, but still more so their excretory ducts, so that a stasis and secondary dilation takes place, to which the greater part of the increase in size must be attributed.

Pupillary Changes after Death.—The development of rigor mortis follows a certain definite law. Three to six hours after death it affects the neck muscles and then descends to the trunk, arms and legs. After three to four days it disappears in the same order. The heart is involved somewhat earlier than the other muscles. Observations on smooth muscle-fibers are very scant, so that A. PLACZEK (Virchow's Archiv, Vol. 173, No. 1) made a systematic study of the size of the pupils at various times after death to ascertain if the muscles of the iris follow the general law. Cats were selected, since their prominent iris permits of very accurate measurement. In the first two hours after death, the pupils begin to contract; this goes on until, after six to twenty-four hours, only a narrow slit remains. After twenty-four to forty-eight hours relaxation is again complete and no further excursions are then noticed. There may be individual variations; thus the process need not be synchronous on both eyes of the same animal; the secondary dilatation may be interrupted for a short time by a secondary contraction or the secondary dilatation need not occur at all. The pupil varies much in shape when completely contracted; it frequently is very irregular in outline. In man, rigor mortis of the iris begins in the second half of the day of death or in the first half of the following day, hence is independent of the contractions of the skeletal muscles. Differences on both eyes are also observed very frequently. To explain the contraction it must be assumed that the tonus of the dilator pupillæ is lost much sooner than that of the constrictor pupillæ. The author then examined a number of pupils that were altered in size by drugs shortly before death. Eserin injected subcutaneously was followed by miosis; shortly before death the pupils dilated and after death behaved as stated above. Applied locally there was contraction followed by maximum dilatation in the death agony; the post-mortal changes were the same as before. Exactly the same phenomena were observed after morphine injections and after division of the sympathetic nerve. The post-mortal variations in size were not affected by mydriatics instilled before death any more than by miotics; the pupils did not dilate until just before death and then contracted and dilated as before. When a drug which acts directly upon the muscles of the iris (adrenalin) was employed, the dilatation persisted much longer after death and was followed by only a slight contraction.

The Relation of Blood Sera to Strychnine Poisoning.—The success which has attended the efforts to immunize individuals with respect to certain pathogenic agents, has, according to D. LO MONACO (Archives Italiennes de Biologie, June 10, 1903), inspired many investigators to discover methods of immunizing animals against not only organic but also inorganic poisons. These researches take their point of departure from two facts, namely: the pharmacological experience that all organisms do not react with the same intensity toward certain toxic agents, certain animals having a natural immunity toward particular poisons; and the possibility that animals are capable of acquiring toleration for otherwise deadly quantities of alkaloids or metallic salts, *e.g.*, arsenic eaters, opium fiends, etc. Ehrlich, by the gradually increased and prolonged administration of abrin (a deadly poison contained in jequirity) and ricin, succeeded in immunizing animals against otherwise fatal doses of these poisons, and demonstrated, moreover, that the serum of these animals, when injected into others, transmitted to them this same immunity. Rummo was able to habituate guinea pigs to very large doses of strychnine, and found that the animals thus treated possessed a marked resistance to infection with otherwise fatal cultures of tetanus bacilli. Both Giacosa and Robecchi obtained negative results in the effort to fortify against fatal doses of strychnine, rats, rabbits and guinea-pigs, by means of injections of the blood serum of the hen, an animal strongly tolerant to this drug. Although curare, ether, chloroform, chloral, paraldehyde, the bromides, etc., have been used in strychnine poisoning, none of these drugs can be recognized as an antidote. It is of peculiar interest that Lusini was able to protect rabbits against the minimum fatal doses of strychnine (.6 mg. per kg.) by means of injections of antitetanic serum, administerd before or after the injection of the toxic dose. Centanni and Bruschettini obtained the same results with polyvaccin. The author, inspired by the success of the above investigators, conducted a research with the object of determining whether rabbits may be partially immunized against strychnine poisoning by means of single or repeated injections of the blood sera of herbivorous animals, themselves not specially tolerant of strychnine. He was successful. The blood serum of the horse, and to a more uniform degree, that of the cow, after four or five injections into the rabbit enables this animal to tolerate the minimum fatal dose. The convulsive stage occurs, but it apppears late, is short and is not followed by marked exhaustion. If the prophylactic treatment is continued for about twelve days, the resistance to poisoning becomes more marked. By using the blood of the immunized rabbit and injecting its serum into another rabbit on successive days, the author was able, although in only one instance, to transfer this immunity. He also succeeded in augmenting the resistance of rabbits to strychnine by means of repeated doses of the antitoxins of tetanus, bubonic plague, and, best of all, of diphtheria. He believes that the natural resistance of an animal to this drug has no influence on the antitoxic value of its serum. The fact that a homogeneous serum (that of another rabbit) has no action, as is also the case with the serum of the hen, while the serum of the horse or the cow produced good results, leads the author to infer that the antistrychnic action depends upon the power which the above sera possess, of producing in the animal treated, anti-bodies or antitoxins capable of fixing a certain number of the strychnine molecules. The antistrychnic efficiency of the various antitoxic sera, would seem to depend upon the fact that besides their predominant specific action, they have secondary actions, the side-chains of Ehrlich that are produced in cells sensitive to a certain poison, having either in their greater part a specific action and to a less extent secondary actions, or having this property, namely, that their specificity does not exclude the possibility that they are able to act against other forms of virus, in the absence of the one for which they have been elaborated. In view of the success obtained with the diphtheria antitoxin, the author suggests that it might receive some practical application clinically in the treatment of strychnine poisoning.

The Communicability of Bubonic Plague to and of Bats.—Many species of animals have already been investigated with reference to their susceptibility to this disease, according to B. GOSIO (Archives Italiennes de Biologie, June 10, 1903). Rats, mice and pigs are spontaneously infected. Experimentally the disease has been communicated also to the muskrat, guinea pig, rabbit, monkey, cat, hen, sparrow and fly. Pigeons are rendered susceptible during the period of fasting, and lizards and snakes by raising their temperature. Immune are the dog, cow, hedgehog and frog. During

the light epidemic of the pest at Naples, the author had occasion to investigate the locality in which the epidemic had its origin, and found it infested not only with rats, but also with a large number of bats. He discovered experimentally that these animals contract the plague and succumb to it in a relatively short time, even after the subcutaneous injection of very small doses. All the internal organs are infected with the specific germs, which are again normally virulent to the rat and guinea pig. Characteristic is the marked splenitis. The parasites of the bat which has been killed by the disease may be infected with the germs, and thus, in all probability, transmit them to the ordinary channels of contagion. The remarkable number of different parasites, the special means of locomotion possessed by the bat and its extreme susceptibility, all give it an importance as a carrier of the bubonic plague.

HYGIENE.

Purification and Sterilization of Water.—As a measure of safety, G. MELLÈRE (Trib. Med., July 18, 1903) holds that all water for domestic use should be sterilized; and that the process of purification should not be confined to drinking water, but should extend to water used in washing vegetables and for other domestic purposes. Naturally the simplest measure consists in boiling, but chemical sterilization may be resorted to if desired; and for this purpose the author suggests peroxide of hydrogen in the proportion of 5 c.c. to the liter. Used in this proportion, it also serves to preserve uncooked milk forty-eight hours in the height of summer; and such treatment of milk in nowise alters digestible or nutritious qualities. The permanganates, in the proportion of 1 to 5 c.c. to the liter, are also serviceable in polluted water; the persistence of a rose color at the end of five hours indicating that the reagent is surely in excess. This excess should be destroyed by addition of a small amount of peroxide. Should purification with peroxide be used as described, the excess of that substance should be neutralized by addition of permanganate sufficient to produce a faint rose tinge; this in turn being caused to disaappear by a trace of peroxide. Iodide of potassium, or better, tincture of iodine, may also be used for the sterilization of water; four drops of the latter in a carafe of water sufficing to render that liquid safe for drinking purposes within a half hour. The slight trace of iodine is not prejudicial to health and is neutralized by the food taken.

Dissemination of Typhoid by Butter.—This question has been made the subject of practical experiments by C. BRUCK (Deut. med. Woch., No. 26, 1903). In these tests water was used to wash out the vessels in which the cream was kept, which had been contaminated by rinsing out in it a cloth slightly soiled with typhoid stools. Butter made from this cream developed colonies the first day, although the stool used for this purpose contained only about sixteen colonies to the plate. The author is inclined to believe that the bacilli are apt to be more numerous in butter than in a like amount of milk or cream. Living bacilli were found in the butter as late as the twenty-seventh day. The greatest increase in numbers occurred during the first few days.

EYE, EAR, NOSE, AND THROAT.

Persistent Intubation of the Larynx.—Chronic post-diphtheritic laryngeal stenoses causing persistent intubation of the larynx are so infrequent that they have not received the attention which this serious condition deserves and the causes have not been fully appreciated. H. W. E. BERG (Med. Rec., Aug. 1, 1903) divides these cases into the following groups: (1) Cases in which the original conditions necessitating intubation persist beyond the usual length of time; (2) cases in which conditions have arisen during or subsequent to the original intubation and which may be due to (*a*) lesions caused by the injurious effect of the intubation tube upon the structures of the glottis, larynx or trachea; or (*b*) may be due to traumatism produced by the operator during intubation or extubation; (3) cases due to the paralysis of the vocal cords, either temporary or persistent. The conditions mentioned in the first group are simply of prolonged inflammatory lesions and might more properly be called protracted cases. In the second group, however, are cases which are the direct result of the insertion or the presence of the tube itself. Although the tube has been such a life-saving device, we should not forget that it is still a foreign body and that its presence in the larynx for any great length of time cannot help but cause some injury. Since the tube is in constant movement during its presence in the larynx, moving with each swallow, cry or even respiration of the patient, it is natural to suppose that unless it is of the proper shape and size serious lesions within the larynx are bound to occur. Decubitus sores, as such injuries are called, are, therefore, rather frequent and are usually situated (1) on the anterior wall of the trachea below the cricoid, due to pressure of the lower end of the tube; (2) above the cricoid over the lateral and anterior surface of the larynx, due to pressure of the retention swell, or (3) on the under surface of the epiglottis, due to pressure against the head of the tube. By far the most important of these is the decubitus above the cricoid laterally and in front, for here is the entrance on both sides of the recurrent laryngeal nerve, the motor nerve of the larynx, and it is urged that it is the pressure paralysis of this nerve which gives rise to the third group of cases, characterized by repeated coughing up of the tubes. Most of these injuries are due to the use of unskilful modifications of the O'Dwyer tube by operators who seem to forget the principles upon which the O'Dwyer tube is constructed. Such cases of decubitus may result in various degrees of stenosis, reincubation oftentimes simply aggravating the condition of the decubitus and finally resulting in permanent intubation to maintain an open passage. When the vocal cords are paralyzed as a result of pressure as described above the tube loses one of its most important means of retention, for the cords do not form a constriction above the retention swell. Thus it becomes very difficult to secure a tube in such a larynx, and it is believed that many of the very annoying and dangerous cases of frequent spontaneous extubations are due to this cause. The prevention of all these complications depends upon careful and skilful work, and an early appreciation of the development of such lesions.

OBSTETRICS AND GYNECOLOGY.

Cæsarian Section in Placenta Previa.—It is impossible to fix upon any definite treatment for all cases of placenta previa, for they differ so much both in regard to the position of the placenta itself and also in regard to the variety of conditions in which the mother may be found. H. D. FRY (Maryland Med. Jour., July, 1903) holds that each case must be handled on its own merits. The tampon and leaving delivery is the best method in one class of cases; the forceps are best in another; podalic version in another; the combined external and internal versions in another, and, perhaps, Cæsarian section in still another. Modern methods have given valuable accessories to success. (1) The recognition of the importance of emptying the uterus in every case as soon as the diagnosis can be made; (2) asepsis has eliminated one great source of fatality; (3) the adoption of bipolar version, and (4) slow extraction of the infant has done much to lower maternal if not

fetal mortality. If the best method is adopted in each case the mortality should be from three to five per cent. Should so serious an operation, therefore, be adopted in a condition with no greater mortality than this? The mortality from Cæsarian section has also been greatly reduced by modern methods and the decision in regard to its use in placenta previa must rest upon the selection of the operation to meet certain combinations of conditions. If the position of the placenta is only partial insertion over the os and the cervix is soft and dilatable it is undoubtedly best to deliver by the natural passages. If, however, the woman is in good condition and is not exhausted by prolonged labor and hemorrhage, if the placenta is implanted centrally, or nearly so, and the cervix is undilated and undilatable, as is frequently found in primiparæ, Cæsarian section, when performed under the best conditions, is not only justifiable but undoubtedly gives the least mortality to the mother and greatly lessens the dangers to the child.

Ovarian Transplantation and Reconstruction of Fallopian Tubes.—The very annoying symptoms which sometimes arise from a double ovariotomy necessitated by a diseased condition of those organs frequently need serious attention and the fact that the menstrual function has permanently been stopped is sufficient reason to materially disorder, if not destroy, the subsequent happiness of some women's lives. F. H. MARTIN (Chicago Med. Rec., July, 1903) has encountered two such cases and has attempted to alleviate their symptoms by transplanting pieces of normal ovarian tissue from healthy women in whom other operations were being done, and to whom the loss of a portion of their ovaries was either necessary or at least not objectionable. He gives the details of the operations by which new Fallopian tubes were constructed by suturing the mucous membrane of the uterus to the peritoneum and leaving in a drain which was removed per vaginam after a week or ten days, and also the methods by which the ovarian tissue, carefully preserved in salt solution for the few minutes between the two operations, was sutured into the broad ligaments near the opening of the new tubes. In both of these cases there has been a resumption of many of the symptoms which usually accompany the monthly periods and also a gradually increasing mucous discharge at that time. The time which has elapsed (about eight months) has, however, not yet been sufficient to draw exact conclusions from these cases. Experiments upon lower animals have proved that similar operations may be so successful that conception may subsequently occur.

Physicotherapy and Gynecology.—Having used this method of treatment for the reduction or cure of fibroids of the uterus and for the prevention of neoplasms, J. RIVIÈRE (Gaz. de Gyn., July 1, 1903) arrives at the following conclusions as to its efficacy: (1) Ordinarily physicotherapy assists in the recrudescence of fibroids without using exclusively electrolysis, which, other things being equal, should not exceed in strength a current equivalent to 50 milliampères; (2) hydroelectric baths are recommended, with friction to stimulate the skin, remove the dead epidermis, also that the germs may be thus removed, and to assist in the removal of effete matters and organic poisons, and to help the general nutrition of the body. Carbondioxide baths are to be recommended, which, bringing the blood to the skin, stop the flow from the fibromatous uterus, and stimulate and re-establish the general equilibrium of the organic functions. The faradic currents of high frequency, mono- or bipolar vibratory massage are equally of powerful assistance in the treatment of fibromata, as is the continuous current. (3) The treatment by physical and electrical agents, the latter in particular, reduces the pain and metrorrhagia, brings about a return of general and local nutrition and produces a localized anemia and general purification. It is then an etiological medication, rational and scientific to the highest degree, and remarkable in that it is harmless and wards off the performance and necessity for an operation more or less grave. (4) Physicotherapy presents the evolution of benign tumors into carcinomata, principally in women suffering with arthritic diatheses, in whom also carcinomata constitutes a diathesis of the third decade. (5) Acting at the time to bring about epithelial hyperplasia and thickening ureterial involvements, nephritis and other complications; not finding surgery a supplanter of electrotherapy, either aggressive or destructive. Such then are the principal rules of treatment which, in the hands of the careful specialist, furnish a means to a double end and thereby are in truth an undeniable practical progress in the proper direction.

THERAPEUTICS.

Value of Iodipin.—Now that several years have passed since iodipin has been introduced, H. WINTERNITZ (Münch. med. Woch., July 21, 1903) feels himself justified to pass a definite opinion as to its value. Its external application is to be condemned, for even if vigorously rubbed into the skin day after day, no iodine will appear in the urine. The rectal administration, too, is little satisfactory, for only 10 per cent. are absorbed into the system. The addition of pancreatic gland to the enemata somewhat increases the amount taken up, yet this method of giving the drug is very inaccurate. For internal use the 10-per-cent., and for subcutaneous the 25-per-cent. preparation, is used. Iodipin is not acted upon by the saliva or the gastric juice, even where pathological conditions of the stomach are present, nor does any absorption take place from the gastric mucous membrane. An absorption into the lymph-channels finally occurs from the intestines; the greater part of the drug is taken up unchanged and only a small precentage is split up owing to the alkaline reaction of the intestinal contents. In the blood, iodipin circulates in small amounts and in finest subdivision, and free iodine is constantly split off, to unite with the alkali salts present. As soon as this occurs, iodine can be detected in the urine and saliva. The time which elapses from the ingestion of 1½ to 5 grams of iodipin up to the detection of iodine in the saliva is generally only ten to forty-five minutes where the stomach functionates properly. It requires four to six days till 10 grams of iodipin are eliminated, while the same amount of potassium iodide is already excreted in two to three days. The fat, which is not at once utilized by the body, is stored up chiefly in the muscles, liver, bone-marrow and subcutaneous tissue. The slow assimilation explains why intoxication is not likely to occur. The amount of drug lost through the feces is very small; in one case where the feces were analyzed for many days it only amounted to 4 per cent. It also appears in the milk, both as such and as alkali iodine. Turning now to the subcutaneous administration, it was found that after long-continued use, iodine could still be found in the urine 402 days after the last dose was given. Here also the various internal organs and the blood give positive iodine reactions. Massage, bodily exercise and baths will invariably hasten absorption and excretion. It follows from all this, that iodipin is indicated where a prolonged effect is desired, especially since loss of weight and cachexia do not develop. In bronchial asthma, luetic endarteritis and lead colic much more can be accomplished than with the iodides.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS in the form of Scientific Articles, Clinical Memoranda, Correspondence or News Items of interest to the profession are invited from all parts of the world. Reprints to the number of 250 of original articles contributed exclusively to the MEDICAL NEWS will be furnished without charge if the request therefor accompanies the manuscript. When necessary to elucidate the text illustrations will be engraved from drawings or photographs furnished by the author. Manuscript should be typewritten.

SMITH ELY JELLIFFE, A.M., M.D., Ph.D., Editor,
No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada.

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM . .	8.00

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, AUGUST 29, 1903.

HYPNOTISM IN INCURABLE ORGANIC DISEASE.

THERE is a considerable number of physicians, among whom not a few neurologists, in whose minds the practice of hypnotism is, for some reason or other, connected with quackery, and thus relegated to the class of questionable remedial means. The disrepute in which this frequently very efficient therapeutic agency is held, is entirely undeserved, for though by no means a panacea for every ill that flesh is heir to, it is undoubtedly of great utility in a certain class of cases in which its employment seems to be indicated.

That hypnotism has been of undoubted value in a great many functional disorders not even its most pronounced opponents will deny. Its use, however, in organic affections of the nervous system, though of rather recent date, already shows some interesting results which will undoubtedly attract the attention of the fair-minded and unprejudiced. Those of us who, whether in the clinic or in private offices, were compelled to confess our utter helplessness, in the face of organic diseases, to even alleviate to any extent the sufferings of the unfortunate patients, will be interested to know that in some of these cases hypnotism has brought about a degree of improvement and comparative freedom from distressing symptoms for an appreciable length of time.

Dr. Pevnitzy (*Roussky Vrach*, No. 26, 1903) describes a few of such cases, as observed by him in Bechterew's neurological clinic. In one of the two cases of syringomyelia of four years' duration, which did not respond to any extent to prolonged routine treatment with electricity, medicated baths, massage, strychnine, etc., a three months' course of hypnotism seems to have done the patient a great deal of good, inasmuch as his mental state, formerly markedly hypochondriacal and tinged with suicidal tendencies, became very hopeful; he enjoys good sleep, is able to swallow better than before, while his sensibility to pain and his temperature sense are gradually returning. This improvement, the author is quite sure, can only be ascribed to the employment of hypnotism in the case. In another patient, with transverse meningomyelitis, improvement, thanks to the addition of hypnotism to other treatment, was evidenced by comparative freedom in walking (on crutches), and a feeling of strength in the lower extremities, whereas formerly she walked with very great difficulty. In a tabetic, although the pains and gastric crisis were not markedly influenced by hypnotization, the author succeeded in improving his gait (comparative freedom in stepping over a polished floor as well as in climbing upstairs), and his general condition. Even in a desperate case of syphilitic meningomyelitis hypnotism brought about, temporarily of course, a condition of comparative quietude, and turned a quarrelsome, unbearable patient into one who became grateful and obliging. To be sure, the very great majority of these patients recognize but too clearly the serious nature of their condition, and are intensely interested in anything that carries with it some hope of relieving their suffering. They readily lend their credence to any promise on the part of the physician, and thus become easily suggestible, which fact is of great importance in obtaining favorable results from hypnotism.

SUBCUTANEOUS INJECTIONS FOR SYPHILIS.

THE discussion on the subject of the treatment of syphilis by subcutaneous injections of mercury, at the last meeting of the American Medical Association at New Orleans, brought out the fact that in recent years many more specialists in venereal diseases are employing this treatment than formerly. There seems no doubt in the minds of many men of large experience in the treatment of

syphilis that in certain fulminant cases of the disease a more certain and more rapid effect can be obtained by injections of mercury than by any other means. In visceral involvement, and especially when there are threatening symptoms of syphilis of the nervous system, these authorities prefer the hypodermic method, and the results appear to justify their conclusions in the matter. There are certain dangers, as for instance that of embolism, but it is now generally agreed that, even according to the most unfavorable statistics, this is extremely rare, occurring not more than once in about 3,000 cases. Recent clinical experience shows this accident to have been exaggerated and that occasional symptoms supposed to be due to embolus are really the result of the syphilitic process or of some intercurrent event which symptomatically suggests an embolic process in lungs or brain.

In a very large number of these cases it can readily be understood that coincidental pathological conditions will apparently point to some injury to the nervous system. Dr. Heidingsfeld's case in which, within a short time after an injection, a man developed paralysis of the muscles supplied by the facial nerve and seemed, when first seen, to be suffering from an embolus of the face area in the cortex, proved on more careful study to be simply a case of Bell's palsy. Undoubtedly some of the ill repute of mercurial injections is due to errors of this kind and it should not be forgotten that usually when mercurial injections are employed, symptoms of syphilitic invasion of the nerve centers are already present.

Recently Professor Jullien, of Paris, whose large experience with subcutaneous injections of mercury extends over a quarter of a century, and gives him a right to be heard with attention on this subject, insisted that far from being less prone to give mercury by injection, he employs it with increasing frequency, though by no means does he consider it suitable for all cases. His experience at the hospital Saint-Lazare, which is the lock hospital and prison for women in Paris, and in which all the prostitutes suffering from venereal diseases are confined during the infectious period of their disorders, makes his opinion of great practical value. Neither among these patients nor in his private practice, where he uses the injections whenever they seem advisable absolutely without any sense of insecurity has he met any untoward results.

His favorite materials for injection are the insoluble preparations, especially calomel and gray oil. Calomel is used in doses of about five centigrams for patients whose weight does not exceed 120 pounds, up to ten centigrams for patients who weigh 200 pounds or over. Injections are made every eight days until four injections have been taken and then the intervals are lengthened two days each time until about twenty days is reached as the period when usually the injections are repeated thereafter only about once a month. The technic, however, in this matter is eminently individual, and depends in a large degree on the way the patient reacts to the injection.

Professor Jullien has found the salicylate of mercury well borne and not at all likely to produce either severe stomatitis, pain or the nodular swellings that are sources of so much discomfort to patients when other mercurial preparations are given. Its action is slow but sure. Injections are given usually twice a week, each injection consisting of about six centigrams for an individual of average weight. Professor Jullien insists on the dosage of mercury being adapted to the size as well as the idiosyncrasy of the individual and considers that the salicylate of mercury is very effective in maintaining a moderate mercurialization over a long period.

There are certain advantages in the use of injections that cannot be ignored. Not infrequently has it been found that obstinate and unsightly symptoms of syphilis, which would yield to no other treatment, have yielded almost at once after mercurial injections were begun. The same good results have followed injections for peculiar nervous symptoms, especially those of generalized conditions evidently dependent on the affection of a number of blood-vessels in the central nervous system which have failed to be relieved by even a lengthy inunction cure. It is evident then that every practitioner who has a number of syphilitic patients in his clientele should be ready to give mercurial injections and should know the technic and something definite of the various preparations that have been recommended by specialists in this matter. Whether injections ever accomplish what has been claimed by some enthusiastic advocates of this method of treatment, namely an abortion of syphilis in an early stage, remains very doubtful. Certainly there are patients with many symptoms of syphilis present in whom the use of a few injections of mercury, repeated at longer intervals for a time, has been followed not only by the immediate disappearance of all luetic manifestations, but has put the patient in a condition where no other signs of syph-

ilis have ever appeared. The method has now been before the profession for nearly thirty years, so that such claims can be substantiated by clinical experience of a character to command respectful attention.

UNSANITARY MILK RECEPTACLES.

Our attention has recently been called to an article written for a dairy paper by Professor W. W. Hall, of Cornell, setting forth the miserable condition in which empty milk cans are found when returned for refilling. With all the safeguards we now have for the protection of the public against harmful and inferior milk it is a trifle humiliating to find this very public acting so carelessly and unconcernedly in a matter of such vital importance to general health. Professor Hall is inspector in a factory where 30,000 pounds of milk are shipped every day to various cities in the State of New York, and he reports that a majority of the bottles returned are in a state too filthy to bear mention, and that the men who are accustomed to handling milk daily can scarcely endure the horrible stench coming from these receptacles.

It seems strange that in an enlightened country like ours, where the people are taught, through the newspapers and otherwise, the great value and necessity of preventing disease by prophylactic measures, that such abject and wholly unpardonable laxity should exist. It is certainly a small enough thing to do when a bottle is emptied to allow hot water to flow into it from the faucet over a kitchen sink and to pour it out again. This is about all that is necessary to clear the bottle of a culture medium in which nearly every kind of bacteria grows in tremendous multiplicity; yet human perversity is such that a like task proves too great for the tired kitchen maid, hence the result.

Professor Hall says: "I made a careful inspection of the cans, after the scrubbing process had been completed and they had been thoroughly treated with live steam, but the foul odor was still there. The dairy farmer is guilty of enough, the factory manager is far from perfection along this line, but no such abuse of milk or milk utensils ever existed at the farm or at the factory as these cans are receiving every day during this extreme hot weather, when the most careful and painstaking methods are necessary."

Yet reprehensible as this practice is, we can scarcely hope for an ultimate change at the hands of servants who constitute for the most part the offending class. The labor problem is already grown too complex to make this element an integral factor in its further development and solution, and we must turn, therefore, to some other way out of the difficulty. Best of all remedies, if it were possible, is the providing of a receptacle efficient enough, yet so cheap that it might be thrown away after emptying, or, better still, which might be burnt in the kitchen fire.

This, however, is not at hand, and until it is we shall have to resort to law. But, on the contrary, legal restriction on milk dealers is becoming so severe that many find it difficult to continue business with any profit. Be this as it may, a well-devised law, compelling the daily collection of milk receptacles from house to house, and a specification of the most effective means of cleansing the bottles and cans, would do much toward an amelioration of the present dangerous conditions.

We can only hope that the New York authorities will take the initiative in this matter.

ECHOES AND NEWS.

NEW YORK.

An Undesirable Patient.—Leo, one of the lions in New York Central Park, recently consulted an oculist, somewhat unwillingly, and his actions caused the specialist to decide that an operation "will not be necessary." Leo is suffering from a cataract in his right eye. Dr. W. R. Gilfillan said that the operation was not likely to be a success, and that with his left eye the beast could easily find his way about.

New Women's Hospital.—Work will soon be begun on the new Women's Hospital, in One Hundred and Tenth street, near Amsterdam avenue. The building is to replace the institution now at Lexington avenue and Fiftieth street. It is to be six stories in height, with basement and attic, and will cost $610,000. In equipment the new hospital will be one of the most complete institutions of the kind in the country. The first floor will have a lecture hall and chapel, the second and third floors will be devoted to private wards, and the fourth floor and the wings will have endowed beds. On the floor above will be a ward for critical cases, and the top floor will be the living place for physicians and hospital attachés.

PHILADELPHIA.

Radical Measures to Stamp Out Rabies.—The State Live Stock Sanitary Board, because of evidence of rabies now existing among the dogs of Columbia County, has decided that all dogs in the county must be quarantined for 90 days. The death of the animal and a fine of from $10 to $100 is the penalty for violating the order.

Increase in Typhoid and Smallpox.—For the week ending August 22 there were 118 cases of typhoid fever as compared with 91 of the previous week. The new cases are distributed over all parts of the city, including those wards supplied with filtered water. Twenty cases of smallpox were reported, an increase of four. Director Martin, after a thorough study of typhoid fever conditions in the city is convinced

that from 25 to 35 per cent. of the cases are due to milk instead of water. A directory of milkmen and of establishments at which milk is sold is in preparation and whenever a new case of typhoid fever is reported the milk supply of the house will be traced and examined.

Typhoid Fever in Schuylkill County.—Typhoid fever is epidemic in Schuylkill, the disease having broken out at Ashland, Pinegrove, Pottsville, and several other places. The Pottsville Hospital is treating seven cases and there have been a score of deaths in the Ashland region.

Director Martin Pays City Employees.—It is stated that Director Martin has advanced $4,000 to complete the June and July pay rolls of the employes of the Municipal Hospital. The $15,000 appropriated by Councils was exhausted when the June pay roll was but half completed.

Filtered Water Above Standard.—Chief Hill of the Bureau of Filtration, declares that the best results ever obtained outside of a laboratory by a slow sand filtration have been reported to him by the engineers in charge of the Upper Roxborough plant. Schuylkill water containing 42,000 bacteria per cubic centimeter was purified by the sand bed completed a week ago so that the bacteria were reduced to 12. The highest amount left by any of the beds is 60 per cubic centimeter.

Queer Verdict in the Ball Park Disaster.—The Coroner's jury which investigated the recent disaster at the Philadelphia Ball Park by which 12 people lost their lives, found that the accident was due to the rotten condition of the supporting timbers of the stand. They recommend an increased number of building inspectors and that the inspectors be given more power. The queer part of the verdict was that the Philadelphia Base Ball Club, the former owners, was found responsible in not having made a thorough investigation of the timbers in the stand during its ownership and in stating at the time of transfer that the buildings on the ground were in first class condition. The verdict against a corporation that has passed out of existence is considered remarkable.

CHICAGO.

Hospital to be Enlarged.—Alexian Brothers' Hospital has purchased a plot of land adjacent to the hospital, 485 by 125 feet, for $10,000.

Appointment of Dr. Riebel.—Dr. Ernst Riebel has been appointed an associated member of the County Hospital surgical staff.

General Hospitals Require no Frontal Consent.—Acting Corporation Counsel Fyffe has given an opinion to the effect that general hospitals are not required to secure the frontage consent of residents in the same block in order to build. Hospitals for the insane, inebriates and the treatment of contagious diseases require frontage consents.

Impure Milk.—Out of 760 samples of milk and cream analyzed in the Laboratory during the week, 60 were found below grade. Among these 760 samples from all sources there were 112 taken at the trains—before the milk had come into the possession of the city dealer. Out of these 112 samples four were found below the standard of butter fat, and 40 below the standard of total solids.

Typhoid Fever.—Although the anticipated increase of typhoid fever has resulted to quite as great an extent as was feared from the pollution of the city water several weeks since it has not yet been reflected in the mortality. Nearly all hospitals report an increase of cases—the net figures being about 28 per cent. greater than for the previous week. But the typhoid deaths reported are decreasing—only 8 during the week against 11 the week before, and 45 in the corresponding week of last year.

Smallpox.—Ten new cases of smallpox have been discovered and removed to the Isolation Hospital. The Chief Medical Inspector dwells upon the fact that none of these had ever been vaccinated, and that 7 of them were children ranging in age from two months to six years. The type of the disease this year is much more serious than last year. In 1902 there were 338 cases with only 5 deaths—a mortality rate of less than one and a half per cent. Thus far this year there have been 346 cases and 45 deaths—a mortality rate of 13 per cent.

GENERAL.

Electro-Therapeutic Association.—The annual meeting of the American Electro-Therapeutic Association will be held at Atlantic City, N. J., September 22, 23, and 24, 1903. An unusually attractive program has been provided.

Virginia Medical Society.—The thirty-fourth annual meeting of the Medical Society of Virginia will occur at Roanoke, September, 15, 16, and 17, 1903.

International Dermatological Congress.—The fifth International Dermatological Medical Congress will meet in Berlin, Germany, September 13 to 17, 1904. The following subjects have been selected by the officers of the Congress for discussion: (1) The syphilitic affections of the circulatory apparatus. (2) The diseases of the skin in anomalies of metabolism. (3) Epitheliomas and their treatment. Dr. James Nevins Hyde, of Chicago, is secretary for America.

International Congress for the Study of Tuberculosis.—This congress will be held in Paris, September 24 to October 1, 1904. Subjects for discussion and special report will be: (1) Treatment of Lupus by New Methods ;(2) Early Diagnosis of Tuberculosis; (3) Comparative Study of the Various Tuberculous Affections; (4) Etiological Factors in Tuberculosis; (5) Value of Different Methods of Treatment of Tuberculosis. There will also be a technical section which will provide a scientific collection comprising anatomopathological, histological and bacteriological exhibits, statistics, plans for hospitals, sanatoriums and dispensaries, publications, and documents of antituberculous leagues, etc.

Medical Care of Indigent Women in Algeria.—In order to insure proper medical care for indigent women who cannot or will not, by reason of their special customs, consult a male physician, the French government is seeking to organize in all Algerian towns in which the Moslem population is of sufficient numerical importance, a corps of women physicians for the gratuitous treatment of such patients. A salary, proportionate to the amount of work done, will be paid, and a residence, medicine and instruments supplied. A dispensary has already been established in Algiers and Blidah; and others are to be opened in Oran, Tlemcen, Mascara, Mostaganem, Miliana Bône and Bougie.

Plague Victims Die.—Two of the bubonic plague victims on El Bajio ranch have died. The third patient has a chance of recovery. No other cases have been reported. Health authorities are confident there will be no spread of the disease. Stringent quarantine has been enforced and the houses occupied by the patients have been burned. Similar precautions were most successful in preventing the spread of the plague in Osos during the Mazatlan epidemic. El Bajio ranch is close to Sequeiros, Mexico, where the

last case of the plague occurred during the recent epidemic.

Street-Car Accidents.—Seven deaths per month by street-car accidents have been the average in St. Louis since the opening of the present year. The City Council has appointed a special committee to ascertain whether they were due to the lack of stringent laws, the non-enforcement of the present laws, the lack of efficient brakes and fenders, the carelessness of the motormen and conductors, or the employment of incompetent men by the street-car companies. The introducer of the motion stated that he had been in five street-car accidents himself in the past four weeks, and was convinced that, in many cases, carelessness alone was the cause.

Protects Children's Health.—Deputy Health Inspector Ferdinand Sauer of Jersey City yesterday reported to the Health Board that since the issue of the order suspending the sale of "apples on a stick," gastritis among children had almost entirely disappeared. Before the order the disease was epidemic in the Hudson City district and prevalent in other parts of the city.

Pure Water for Ithaca.—Assurance against a repetition of the typhoid fever epidemic of last March was given to the citizens of Ithaca this week when the Ithaca Water Company commenced pumping water from its new filter station into the city mains. For four days the officials of the company and the expert engineers from New York and Philadelphia have been testing the workings of the plant, but there was no announcement that the pumping of water would begin until last Sunday, when the news that purified water was at last to be had spread rapidly through the city, and thousands of people came to visit the plant. Six months ago Cornell University loaned the water company $150,000 for the building of the purification plant, and since that day there has not been a moment when men were not at work on it. The plant is pronounced by Dr. George A. Soper, representing the State Board of Health, to be a perfect piece of work.

Grievances of the Indian Medical Service.—Loud expressions of dissatisfaction with the rewards for their labor are heard at the home office from members of His Majesty's Indian Medical Service. Chief among the general grievances is slowness of promotion. As things are at present no officer can get the promotion which he has a right to expect until he has served for about thirty years. Expressed in terms of money this means that all officers who entered the service over the age of 25—that is to say, most of those now entering—can look forward to a pension of only £500 instead of £700, or possibly £950. It is suggested that all officers should be allowed to complete 30 years' service before compulsory retirement, and that every year's service over 25 should qualify for an additional £40 a year. Another grievance is the inadequacy of the present scale of pay. A class of educated native practitioners have created, and they not unnaturally get the larger part of the private practice which used to form a substantial addition to an officer's pay. Then the depreciation of the rupee causes a loss of about one-third of the pay as originally fixed. It has been urged, therefore, that the pay should be increased proportionately with that of the Royal Army Medical Corps.

Mr. Edison in Medicine.—Thomas A. Edison, the inventor, announced on last Thursday that he had branched out temporarily into medicine and had made a study of a cancerous growth which started on the arm of his assistant, after he had been burned by Roentgen rays. The inventor says he thinks he has hit upon a cure for similar cancers, although he will let the surgeons and scientific physiologists work out the problem. Mr. Edison's theory is that any cancer which begins on the surface, can be cured by the introduction of fresh blood from a healthy subject into the blood of the person affected.

Memorial Fund in Honor of Dr. Reed.—On August 15, a meeting was held in Bar Harbor, of friends of the late Major Reed, M.D., U.S.A., to whom in a large degree is due both the discovery of the mode by which yellow fever has been spread, and also the consequent suppression of that dire disease. Representative men were present from different parts of the country and letters were received from various members of committees already appointed to promote the collection of a memorial fund in grateful commemoration of Dr. Reed's services. Important suggestions were presented from President Eliot, Dr. W. W. Keen, Prof. J. W. Mallot and others. Dr. Daniel C. Gilman, chairman of a committee appointed by the American Association for the Advancement of Science, presided, and Dr. Stuart Paton acted as Secretary. Among those who took part in the conference were Dr. W. H. Welch, of Baltimore, Dr. Janeway, of New York, Dr. Abbott, of Philadelphia, Dr. Herter, of New York, Dr. Barker, of Chicago, Dr. Putnam, of Buffalo, Dr. Fremont Smith, of Bar Harbor, and Dr. Sajous, of Philadelphia, and besides these medical gentlemen, Bishop Lawrence, of Massachusetts, and Messrs. Morris K. Jesup, President of the New York Chamber of Commerce, John S. Kennedy, President of the Presbyterian Hospital of New York and William J. Schieffelin, of New York. The following conclusions were reached: That an effort should be made to raise a memorial fund of $25,000 or more, the income to be given to the widow and daughter of Dr. Reed, and after their decease the principal to be appropriated either to the promotion of researches in Dr. Reed's special field, or to the erection of a memorial in his honor at Washington.

Arrangements were made for the publication of circulars explaining this movement, and asking cooperation not only from the medical profession, but from all liberally disposed individuals who appreciate the value of Dr. Reed's services to mankind.

X-Science Not for Animals.—The Texas District Court at McKinney has decided against Christian Science as the proper treatment for animals. The case came from the county court in a suit brought by a farmer of Collins county against the Houston and Texas Central Railroad for so injuring his horses with a train that they died. The testimony was straight, and it seemed that the plaintiff would win his contention without doubt. He went on the stand in his own behalf, and what he said in answer to questions strengthened his case until the attorney for the railroad asked him what treatment he had given the horses. He answered that he had given them the Christian Science treatment only. He had prayed for them, but had put nothing on their wounds and had done nothing to relieve them. The jury returned a verdict for the railroad company.

The Heroic Death of Dr. Salazar.—Dr. Salazar, physician in charge of the American Hospital in Tampico, has given his life in a brave fight to check the yellow fever epidemic. No death of the summer has caused more grief among the classes with whom he labored, while the manner of his death has excited the greatest possible admiration for his bravery. The physician's labor during the epidemic was unremitting. Despite the warnings of friends he persisted

in working by the bedside of his patients long hours, sometimes without food and always without proper rest. To the American colony he was most assiduous in his attentions, and his direction of the hospital brought it to a high state of sanitary perfection. Dr. Salazar detected symptoms of the fever in himself less than a week ago, but not until the disease had progressed far did he relinquish the direction of his staff. Then he turned to studying the state of his own disease, noted every advance, and at the last cooly called for pen and paper and wrote his own death certificate. Since his death to-day the Mexican health authorities have made a careful inspection of the American Hospital, and their report declares it to be in an excellent condition.

Obituary.—After an illness of two days Dr. Phanelt Coe Barker, founder of Morristown Memorial Hospital and dean of the medical profession in Morristown, N. J., died in that city August 21 from angina pectoris. He was sixty-eight years old, and went to Morristown about forty years ago. Twelve years ago he founded the Morristown Memorial Hospital Association, which built the Morristown Memorial Hospital, the finest institution of its kind in Northern New Jersey. Every day up to a week before his death Dr. Barker made a personal visit to the hospital.

CORRESPONDENCE.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, August 8.

THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION—CANCER RESEARCH—THE LISTER INSTITUTE.

THE annual meeting of the British Medical Association which took place at Swansea last week was the first held under the reformed constitution. Some anxiety was felt by those responsible for the new organization as to the working of the somewhat complicated machinery which has been devised to enable the Association to give expression to its corporate wishes. All went off without a hitch, however, mainly owing to the tact and moderation of Sir Victor Horsley, who was elected Chairman of the Representative Meeting which now controls the political action and general business of the Association. Neither tact nor moderation has hitherto been among the characteristics of Sir Victor Horsley in his public capacity, but his experience of practical affairs appears to be teaching him that the methods of the irresponsible agitator are out of place in a responsible official. Thiers tamed Rochefort, whom he had described as a *fou furieux*, by giving him a place in his government; and it may be hoped that a like cause may transform Horsley from a demagogue into a statesman. At any rate if the Representative Meeting under his management did nothing very remarkable, it must be allowed the credit of having done something, and that in itself is a novelty in the history of the British Medical Asociation sufficient to justify us in regarding this year's meeting as epoch making. The fundamental reform in the constitution of the Association is the transference of the center of power from the members in Annual Meeting assembled—which was little more than a fortuitous and momentary concourse of atoms—to a body of representatives elected by the Branches and sent by them to be the mouthpieces of their views. From the purely theoretical point of view this seems to be a distinct improvement, but in practice it will probably mean nothing more than a change in the name of the governing body. The real obstacle in the way of all useful reform is the profound indifference with which the whole matter is regarded by the bulk of the members. The fact is, medical politics are scarcely considered respectable by the majority of practitioners who have plenty of professional work to keep them busy. It is the young men who have nothing to do who naturally find time to occupy themselves with public affairs. *Plus ça change, plus c'est la même chose.* The British Medical Association, whatever may nominally be its form of government, must always be under the direction of an active minority. Of the scientific side of the meeting there is not much to be said. It is the rule of the Association that each year its President should be chosen from among the local luminaries, who, in a place like Swansea, are naturally not stars of the first or even of the second magnitude. The President this year is a worthy general practitioner whose address was marked rather by strong practical sense than by original thought or philosophic breadth of view. His best point was in reference to the fallacy of estimating the sanitary condition of the country by the general death-rate. A decline in the rate has, he said, perhaps tended to blind us to facts which lie a little below the surface. It is true that during the last thirty years the annual death-rate of all ages in England and Wales has fallen from 22.25 to 16.3 per thousand living, a gain of about 26 per cent.; but on the other hand the death-rate of infants under one year of age has risen nearly 2 per cent., while the birth-rate has diminished. Nearly half the total number of children born are dead within five years. The increased mortality among infants is due to diarrhea and enteritis, and the increase due to these causes is seven times greater in towns than in the country. Moreover, the mortality from diarrhea is much greater among infants artificially fed than among those fed at the breast. Although much of the mortality is due to the ignorance or carelessness of mothers, Dr. Griffiths sees in it an illustration of a defect in our sanitary administration. Our regulations as to the conduct of dairy farms and other matters vitally important to the health of infants are mostly of an optional character, and the local authorities in too many cases do not enforce them. In its social aspects the meeting was very pleasant. One of the most enjoyable entertainments was a visit to the Goddess of Song, Madame Patti, in her fairy bower at Craig-y-Nos. One of those privileged to see her in her home informed me that she is likely to visit America again before long. The annual meeting next year is to be held in the historic University town of Oxford.

The epidemic of cancer cures continues. This very day we are informed by the daily papers—which of course have the statement from "an authoritative source"—that Dr. Bashford, Director of the work done under the auspices of the Cancer Research Fund, and his assistant, Dr. Murray, have solved the mystery of the causation of cancer—or are on the eve of a great discovery. But alas! so many have with equal confidence proclaimed that they had found the answer to the riddle that one may perhaps be pardoned for feeling a certain skepticism as to the success of the most recent claimants. There is all the more reason for doubt, since only a few days ago, on July 30, a meeting of the Cancer Research Fund was held under the presidency of the Prime Minister, Mr. Arthur Balfour, at which a report was presented by the aforesaid Dr. Bashford in which the results of the investigations so far undertaken, were set forth but no mention was made of the momentous discovery in question. Indeed, the report dealt much more with work to be done than with anything yet acomplished. This is scarcely

to be wondered at, considering that the scheme of organized research is as yet scarcely "in being," and its operation is still seriously hindered by lack of funds. Of the capital sum $500,000, which it was estimated would be required for the effective prosecution of the work only a trifle more than a half has up to the present been subscribed. Doubtless it was for this reason that the Committee invited the aid of Mr. Balfour's persuasive eloquence, and if one were dealing with an enterprise under less august auspices, one might be tempted to suspect that the announcement of Dr. Bashford's discovery was made at what is thought to be the psychological moment for the same purpose. Some justification might perhaps be found for such a suspicion in the suggestive manner in which the hint that we are on the verge of a great revelation is coupled with a delicate reference to the hindrance to research caused by want of funds. One of the most important parts of the report is that dealing with therapeutics, the results of the Finsen light treatment, high-frequency currents and X-rays—methods somewhat oddly grouped together under the head of electrotherapeutics—have been the subjects of inquiries directed to those in charge of special departments at hospitals. Reports of some 400 cases have been submitted for the consideration of the Cancer Research Committee. The results of the treatment of rodent ulcer by means of X-rays are confirmatory of previous experiences. It is said that recurrence occurs in from 20 to 40 per cent. of the cases, but are as a rule as amenable to treatment as the primary disease. Complete healing was obtained in 141 out of 216 cases, of which detailed reports were sent to the Committee. This gives a proportion of 65 per cent. of successes. It is pointed out that as the majority of cases were inoperable or had already been treated by the knife and had recurred, this high percentage is very satisfactory. Of the remaining cases, improvement was recorded in 43, no benefit resulted in 16, while in 3 instances the disease was aggravated. With regard to other forms of malignant growth, the Committee state categorically: "The results so far brought to our notice do not establish the efficiency of any of these measures as curative measures in sarcoma and carcinoma." In view of the very many statements recently made in the high-class newspapers to the effect that the Committee would recommend high-frequency currents as the true and only cure for cancer, this pronouncement should be read, marked, and inwardly digested by the journalists who seek inspiration in medical matters from doubtful oracles. An especially satisfactory feature in the report is the indication of the fact that an exhaustive investigation on cancer in animals and its relation to the disease in human beings has been undertaken.

The Jenner Institute of Preventive Medicine is henceforth to be known as the Lister Institute. This change of patronage, which has been made with the reluctant consent of Lord Lister, is not due to any decay in the fervor of the cult of Jenner. The reason is that another Jenner Institute, which is a purely commercial concern, whose business is the manufacture of vaccine lymph, has been in existence for some years, and as the Institute of Preventive Medicine also manufactures lymph, there was frequent confusion and occasional conflict between the two establishments. London now has a Lister as Paris has a Pasteur Institute. The Lister Institute is well endowed, thanks to the munificence of Lord Iveagh who two or three years ago gave it $1,250,000. There is a close connection between brewing and bacteriology; hence there is a special appropriateness in the benefaction of Lord Iveagh, whose patronymic is Guinness, of double Stout fame, to an institute founded for bacteriological research.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

VIENNA, August 2.

EXAMINATION REGULATIONS IN AUSTRIA—WEIMAR UNIVERSITY—TRACHOMA IN THE AUSTRIAN ARMY.

THE Minister of Education edited the new examination regulations on December 21, 1899. These have been made chiefly according to the propositions of Exner, the secretary of the Minister. He also proclaimed in the society of Vienna physicians this new system, and was confronted with a sharp critique from an illustrious member of the Professors of the University. When the new regulations were first carried out, the students started a powerful movement against them.

The Professors of the University sympathized with the students, and to this fact was due that the Minister determined to make essential alterations. These were proclaimed on April 14, and their chief points are as follows: (1) The candidate who wishes to acquire the doctor diploma has to spend ten half years in the medical faculty, and pass three examinations; (2) The number of weekly compulsory lecture hours is 20, with the exception of one semester, when it is reduced to 16. (3) Semesters which were spent in foreign universities can be accepted only if the Minister and a committee of Professors give their consent. (4) Previous to the first examination the student has to attend lectures through four half years, of which two winters must have been spent in the dissection room. (5) Subjects of the first examination are: general biology, medical physics, medical chemistry, anatomy, histology, physiology; the first two subjects are theoretical, the others practical. (6) The second and third examinations can be passed after the finishing of the tenth half year. During the last three years the attendance at the following lectures is compulsory: Internal medicine and surgery, obstetrics and gynecology, ophthalmology, rhinology, otology, and dentistry, also vaccination. (7) The subjects of the second examinations are: Pathological anatomy and histology, general and experimental pathology, pharmocology and prescription, medicine, study of mental and nervous diseases; the second and third subjects are theoretical, the others practical. (8) The subjects of the third examination are: Surgery, obstetrics and gynecology, ophthalmology, study of venereal diseases, dermatology, public hygiene, medical jurisprudence; the last two subjects are theoretical, the others practical. (9) The censors have to pay attention that the candidate may be sufficiently expert in anatomy and physiology. (10) The whole subject of an examination must be laid down within six months. (11) All the examinations must be passed in the same University; only in exceptional cases is it granted (with the consent of the Minister) that one of the examinations shall be passed in another University.

The Weimar Ministry issued this decree, under the title, "What Shall We do In order to Remain Healthy?" comprising 21 hygienic rules, which I give in condensed form, as follows: (1) Take a daily bath; (2) wash your hands often, keeping your finger-nails trimmed and clean; (3) keep your mouth scrupulously clean and brush your teeth after every meal; (4) make your toilet before coming to school; (5) keep your clothing dustless; (6) white garments should be changed often; (7) clean your feet before entering school; (8) refuse of any kind must not be brought to the schoolroom; (9) never expectorate on the floor; (10) remove your outer garments on entering the schoolroom; 11 to 21 deal in the acquirement of plenty of fresh air; school-

rooms should be aired during recess; don't go too long without eating; walk and stand erect; never cross your legs; neither write nor read in dim light; and finally, complain to the schoolmaster if your place is either too cold or too warm, if you don't see or hear well, also notify the schoolmaster if there is infectious or contagious disease near your home.

There are between two and three thousand cases of trachoma in the Austro-Hungarian army. This vast number of cases induced the energetic interference of tne Minister of War. He requested the Army medical staff to plan a method to obstruct the propagation of this terrible disease. Here is one of the methods: To concentrate the afflicted persons to one place, and to watch that no new trachomatic patient shall be allowed to enter military service.

SPECIAL ARTICLE.

BYWAYS OF MEDICAL LITERATURE.—XVI.

FROUDE'S VERACITY AS A PATHOLOGICAL STUDY.

SIR JAMES CRICHTON-BROWNE, M.D., has recently written an introduction to the new letters and memorials of Jane Welsh Carlyle, which are sure to overcome the prejudice created against Thomas Carlyle for his supposed unfeeling treatment of his wife as depicted by Froude's work on their domestic relations. Dr. Crichton-Browne is one of the most distinguished alienists in England, and his essay may well be considered a study in the pathology of lying with James Anthony Froude, the historian as the basis for his study. Froude, though one of the most picturesque and striking English writers of the last generation, and a man whose historical research should have given him a permanent place among the great writers of history, was constantly prone to be led away by his feelings into the expression of opinions for which no one else could find any foundation, but which Froude bolstered up by means of garbled quotations, special points of view and the hundred ways that a prejudiced man has of making his opinion seem justifiable. His picture of Henry VIII. as a hero was the most flagrant example of this, and has been properly labeled by such distinguished historical investigators as Green and Freeman.

It was a shock to the literary world some years ago to find that the domestic life of the Carlyles had been apparently intensely unhappy. Froude edited the letters of Mrs. Carlyle and made it very clear that she lived in a chronic state of unrest and conjugal discomfort. As a matter of fact there proves to be no foundation at all for such an opinion. Carlyle was a loving husband, as husbands go, and Mrs. Carlyle was herself not a little to blame for whatever of unhappiness there was, and seems also to have been one of those on whom imaginary ills, as women occasionally will feign them, had not a little effect. The review of the whole subject will unmake the false impression created by Froude's work and adds a new and piquant feature to the psychology of veracity and of lying. It is evident that some, gentlemen though they may be, and with the best of intentions and apparently with the best of information, will still be sure to see things awry as regards ultimate truth and to express themselves in such a way as to deceive others as regards the actual facts. We might ask them in view of this new evidence what becomes of the "Gouldian" phantasy regarding "eye strain" as a cause of conjugal infelicities?

IMMUNITY TO BEE STINGS.

There has long been a tradition that those who associated much with bees so as to be frequently stung by the insects gradually acquired an immunity to their severer effects, at least. This fact is confirmed by the observations of Dr. H. F. Parker, who devotes some time to bee culture in the neighborhood of Indianapolis. He relates his experience with bees the first year and the intense discomfort occasioned thereby. The stings lost some of the acuteness of their effects in the course of time, but this he attributed to his growing accustomed to them. In the second year, while transferring a swarm of bees, he was stung many times with very little pain or tissue reaction. He says:

"Sting followed sting in succession, in legs, arms, fingers, neck and face. I imagined what a picture I would present—closed eyes and swollen hands and feet. I worked on, and so did the bees. I could feel the needle-like thrust, but then it did not seem to pain as much, and at last I finished the task. With aching head, slight nausea and vertigo slowly coming on, I left my task with a sigh of relief for what was accomplished and filled with wonderment as to what my personal appearance would be.

"Imagine my astonishment to find merely slightly raised red spots, like little pimples, with the red sting in the center, as the result of each and every sting. I must have had something like forty of them on various parts of my body. My clothes were full of them; but, they being so thick, did not allow the sting to penetrate. The dizziness, nausea and headache left me and 'Richard was himself again.'

"When I again visited my bees I did not dread the stinging properties any longer, at least, not as much so as formerly, and then, and ever since, I have found that when a bee does sting me the pain is only sharp for an instant and there is an absence of the after-swelling.

"I have since been stung many more times than I was at that time, and yet none of the symptoms above referred to have been reproduced. Am I not, therefore, immune of the poison of the honey bee, at least to a certain extent? I firmly believe that the beekeeper becomes inoculated with the poison of the bee, and usually becomes proof, or at least immune, against it, is no more to be doubted than the fact that vaccination is a preventive against smallpox."

It is not surprising that bee stings should thus develop a protective immunity to their effects. Practically any poison thus introduced into the system in amounts insufficient to cause serious disturbance is followed by a protective reaction. The method of protecting small animals from snake poison and producing antivenene is founded on this fact. The stings of insects such as the flea and the mosquito produce in many individuals especially susceptible to their stings a corresponding protective effect if the person attacked stays in the neighborhood long enough.

SIR WILLIAM SMYTH.

The following verses were read at the unveiling of a memorial window in stained glass in the Ulster Medical Institute of Belfast, Ireland, only a short time ago. The window commemorates, with proper symbolism, the noble conduct of Dr. William Smyth, during an outbreak of typhus fever on the Island of Arranmore, off the coast of Donegal, one of the northern tier of Irish counties. Dr. Smyth was the nearest physician to the Island, and when asked to give his services rowed daily from the mainland, carrying not only medicine, but food to the fever-stricken peasants. His patients were so poor that he could never hope for anything more than gratitude from them. There was the greatest possible fear of infection throughout all the adjoining countryside. Typhus is still well known and much dreaded in three countries of Europe, Hungary, Russia and Ireland, and its well known contagiousness prevented him from obtaining help. Finally Dr. Brendan McCarthy, the medical inspector of the local government board, of-

fered his services for the relief of the afflicted patients. Together the two physicians obtained an old, leaky, abandoned boat, the only one procurable under the circumstances, and in this they carried the patients to the mainland. The boat leaked so badly that they were in constant danger of foundering. The old craft actually did sink, shortly after they had landed. Dr. Smyth caught the fever, and owing mainly to the fact that his efforts in behalf of his patients had weakened his resisting powers, he succumbed. All of his patients recovered. The verses which we reproduce here are, we consider, one of the best examples of medical memorial verse that we have seen in recent years. The story and its worthy commemoration deserves a place in the scrapbook of every practitioner of medicine, as a testimony to the fact that even in these sordid modern days the true professional spirit is able to raise men above the tendencies of the times and make them heroes in the highest sense of the term:

THE MEMORIAL WINDOW.*

The veil is drawn—and from the jewelled pane
  Flashes on straining eye and beating heart,
  Emblazoned by the Limner's loving art,
A story fashioned in heroic strain.

Yet this, no fabled feat in days of yore,
  No mythic song, nor legendary lay,
  But all-true tale of this our later day,
Amid the wastes and wilds of Arranmore.

A lonely islet in the western wave,
  Lashed by Atlantic surge and winter storm,
  Through it came stalking Fever's spectral form,
Gathering her tribute for the yawning grave.

And men fled shuddering from her pathway—
  Men fled, save only one, a man of men,
  Who, lion-hearted, leapt into her den,
And battled with her for her anguished prey.

Alone across the strait his skiff he plied,
  And knelt beside the sufferer's bed alone,
  Till one, with heart undaunted as his own,
Sprang to the place of peril at his side.

And while the billows break on Arranmore,
  Men still shall wond'ring tell, and wond'ring hear
  How in a wave-worn barque of yester-year,
They piloted the sick from shore to shore.

No thought was theirs of home, of child, of wife,
  Of worldly guerdon, or of worldly fame,
  But theirs the spirit rapt, the heart aflame
To render up, so others lived, their life.

And life from one was called for, and laid down
  By him who first had braved the Fever foe.
  His fellow wears the laurel here below;
But his the martyr's palm, the martyr's crown.

Alone he now hath voyaged forth again,
  And ferrying o'er the unfathomable tide,
  Beholds, encircled by the glorified,
The Sovereign Healer of the whole world's pain.

—Frederick Boas, F.R.U.I.

* We owe our copy of the verses to the Irish Monthly, so ably edited by the brother of the late Chief Justice Russell.

WEATHER PROGNOSTICATION AND ACHY FEELINGS.

Now that we no longer have any confidence in the moon or the special appearances of the clouds at night with regard to the moon, as having any significance for the weather, there is need of something else on which to base predictions since human nature is prone to prophesy. A writer in the New York *Independent*, for July 16, 1903, describing a summer's day in the country, suggests that while the clouds may mean much and such expressions as "the swallows fly low," "the cat eats grass," "the smoke drops down from the chimney," are all the crystallized wisdom of weather prophets from time immemorial, yet after all "the best rain prophesy that I know," he says, "is nerve irritability. If the boys are easily provoked (myself also) there is likely to be a shower."

Here is a weather prophet with ideas worth considering. Sometime it will come to be realized that many of the pains and aches that immediately precede and accompany damp weather, are not due to rheumatism, nor to the rheumatic diathesis, but are just plain everyday irritability consequent upon some change in nervous conditions which are caused by a drop in the barometer perhaps, or perhaps the hydroscopic variation in tissues which follows a change in the atmospheric humidity. Old people become walking barometers in their power to portend storms because the lessened elasticity of their arterial and vascular system prevents or at least hampers those changes in the peripheral circulation which would compensate for variations in barometric pressure. Whenever an injury has taken place around a joint this same state of affairs proclaims itself even in comparatively young subjects. All signs, however, fail in a dry time, so that the human barometer, like most other weather prophets, proves unreliable when it is most needed. It is probable, however, that a careful study of human feelings would enable the would-be weather prophet to prognosticate weather conditions with more assurance than any empirical study of the moon and cloud conditions.

SOCIETY PROCEEDINGS.

BRITISH MEDICAL ASSOCIATION.

Seventy-first Annual Meeting, Held in Swansea, July 28, 29, 30 and 31, 1903.

(Continued from Page 383.)

Inquiry into the Relation of Vaccination to Infant Mortality and Acute Concurrent Infantile Diseases.—Dr. J. M. Mackenzie of Kirkby-in-Ashfied said: "The lay mind is largely impregnated with the idea that not only is vaccination injurious to infant life—that is, that vaccination introduces into the infant's system many diseases which, by their manifestation from time to time, mostly in a chronic form, impair the individual's vitality and render life a burden, but furthermore it is believed that the vaccination process in itself is directly contributory to infant mortality. This last impression is the product of the conflict of medical evidence as observed at public inquests over infants dying soon after vaccination. The well-informed, who readily consent to their children being vaccinated, have a lingering suspicion that the process of vaccination has its origin in the barbarism of the past, and although they admit that the evidence in its favor as a preventive against smallpox is overwhelming, they are still imbued with the impression that many infant maladies follow in its train. The militant antivaccinator, conscious of this state of public feeling, finds his mission in palming off on a too credulous public fables, fancies, and surmises, too often colored by the individual opinions of a few medical practitioners, who may be for the time being—as, for instance, at public inquests—opposed to the vaccinator. Medical questions, especially those of a clinical nature, have always been misunderstood by the laity,

the educated among them as well as the ignorant, hence the physician, with serene confidence in the value of his art, may well afford to go about 'having compassion on the ignorant and those that are out of the way.'

"One is differently impressed when one finds among the followers of Æsculapius the same heterodox teaching. A few years ago I had posted to me a lecture on infant mortality by one who stands high in the profession as a specialist in public health, originally addressed to a lay body, a municipal corporation, who, it may be presumed, received its statements as incontestable, not falling within the domain of dispute. To my surprise I found that in describing the causes of infant mortality vaccination was given as one. Although unable to find that the writer had any very large experience in the work of vaccination or the treating of infants, yet the bare statement that vaccination was a cause of infant mortality made a far deeper impression on my mind than all the arguments of the antivaccinators I have encountered, and they have not been few. Engaged as I have been now for several years as a medical officer of health and public vaccinator to a fairly large urban district, I resolved to find out for myself, as far as reliable statistics would allow me, how much truth there might be in the allegation. The material for the task lay ready to hand, even if it involved a good deal of labor in classifying and tracing all the cases dealt with. In the first place, the registrar for the district provided returns showing date of birth, name of child and parent, residence and where born, for the last three years. The vaccinating officer, on the other hand, placed at my disposal his registers showing the number vaccinated and unvaccinated in the urban district for the same period. As medical officer of health, I received weekly returns of all deaths taking place therein, so that material for the inquiry was complete. Obviously, certain exceptions had to be made, so as to remove as far as possible sources of fallacy. (1) All infants dying under one month were not included, inasmuch as it was found that no child was vaccinated under one month. (2) All infants, whether vaccinated or unvaccinated, who were not born in the district, were excluded, although such were included in the vaccination and death returns, they were absent from the birth returns, and hence could not be dealt with. (3) All who had left the district, whether vaccinated or unvaccinated, were excluded, as it was impossible to trace what happened to them.

"The sifting process, beginning with January, 1900, and ending with July, 1902, left 987 infants to be accounted for whose fate up to the age of twelve months was ascertained in every single instance. In 1900, 329 infants were accounted for, of whom 242 were vaccinated, and of these last 22 died before reaching the age of twelve months, giving a death-rate of 9.09 per 100; for the same year 87 unvaccinated were traced, 13 of whom died before reaching the age of twelve months, being a percentage of 14.94. For 1901, 398 were traced, of whom 264 were vaccinated and 134 unvaccinated. Of the 264 vaccinated, 22 died before reaching the age of twelve months, yielding a death-rate of 8.33. Of the 134 unvaccinated, 22 died, a percentage of 16.41. For 1902, 260 were traced, of whom 200 were vaccinated and 60 were unvaccinated. Of the 200 vaccinated, 16 died before reaching the age of 12 months, yielding a death-rate of 8.00. Of the 60 unvaccinated, 10 died; a death-rate of 16.66. Taking the death-rate for the three years among the vaccinated and unvaccinated, we find the vaccinated yield a death-rate of 8.49 and the unvaccinated 16.01. It will be found on comparison that the death-rate among the vaccinated and unvaccinated varies but little in different years; that is to say, it does not fluctuate. Again the death-rate among the unvaccinated is practically double that among the vaccinated. An explanation of this may be impossible in the limited time at one's disposal, but will be briefly considered further on when discussing the social conditions and neurotic characteristics of those generally found as extremists, antivaccinators included.

"As the main object of this paper is to discover any connection between vaccination and infant mortality, it is necessary to group: (1) The vaccinated according to the age at which vaccination was performed. (2) Deaths among the vaccinated at various ages. (3) Intervals between the vaccinal process and death. (4) Deaths among the unvaccinated at various ages.

"If we compare the death-rate from the more common causes of infant mortality an interesting difference in favor of the vaccinated will be found:—Bronchitis and pneumonia claim 36.13 per 1,000 of the vaccinated against 39.57 for the unvaccinated; marasmus, 5.66 for the vaccinated against 39.57 for the unvaccinated; convulsions, 2.83 for the vaccinated against 10.67 for the unvaccinated; diarrhea, 14.16 for the vaccinated against 35.59 for the unvaccinated; and so on.

"Having regard to the great difference in the death-rate, it is necessary to give what I consider to be the explanation of this difference. Be it noted that I do not claim that vaccination keeps babies alive, but I suggest that the facts disclosed show it does not kill them. The first thought occurring in one's mind is that the unvaccinated are the unhealthy—the children of poor and ignorant people, who take little care of their offspring—and that the incidence of any disease falls more heavily upon them, and hence would account for the difference in the death-rates. From very intimate knowledge of the social condition of the parents of every child that died I am certain that this is not the explanation. Bearing on this aspect of the question, a factor of the greatest importance in the problem is that 94.4 per cent. of the vaccinations under consideration were performed by the public vaccinator, and that at least 30 per cent. of them were among the very poorest of the poor—the casual laborer, the out-of-employment, the ill-housed, ill-clothed, and ill-fed, the children of young people too early married, with neither means or knowledge for rearing up healthy children. We know that among such infantile mortality is alarmingly high. On the other hand, two-thirds of the unvaccinated were the children of conscientious objectors, who obtained their certificates of exemption. The antivaccinators in the district are found among the well-to-do of the working classes, the superior artisan, the small shopkeeper, the intelligent, if argumentative, teetotaler. I have often observed that these extremists were of a neurotic type, easily excited against anything that had the appearance of compulsion. There is a nervous tension in their ethical code which bespeaks instability and lowered vitality; their children die, not from want of care and nutrition, but by inherent constitutional defects. In the early years of their married life they had their children vaccinated, and after their death they quickly jumped to the conclusion that it was due to vaccination, and determined there and then, as if with a sacred vow, that no more of theirs should be vaccinated. This tradition passes from mother to daughter, and still their children die, probably in the same proportion.

"The next point in the explanation, and by far the most important is that the practitioner is extremely discriminating, and does not vaccinate the weaklings—that is, those likely to die within a year. The more care taken in this direction the higher the death-rate among the unvaccinated, as against the vaccinated.

"A popular impression, even among the profession, is that the vaccinal process acting concurrently with another disease imparts a shock to the infant, thereby accelerating its death. This statement is made with all the more show of authority if the infant is in delicate health. Almost every week instances of this description are reported in the newspapers, whereas as a matter of fact the vaccinal process is remarkably gentle in its onset, ushered in by no shock; there is nothing to be observed corresponding with the rigors of adults or the convulsions of infants at the onset of acute disease, for example, pneumonia.

"There is an even, gradual rise of temperature up to 100° or 101° F., with a quickened and full pulse; moreover, be it particularly observed that in delicate children and very young infants the vaccinal process with its accompanying symptoms is milder, and on the whole longer, than in the robust and more advanced in age. Instead of being a danger when running concurrently with other acute diseases, I believe it to be beneficial in many, and to tone down the symptoms of both pathological conditions, namely, the vaccinal process and the acute disease. Let me give a few instances: Beginning with the nearest in relation to vaccinia, let us take smallpox; it is well known that vaccinia running concurrently with the incubation stage of this disease renders the smallpox attack milder, and is altogether beneficial.

Bronchopneumonia.—"A child, E. B., aged three months, was vaccinated on October 23, 1902. The baby was not particularly robust, but her vaccination was quite justifiable. A cousin, W. H., of the same age, lived next door, the child of antivaccinators. This latter, a boy, was much stronger and more robust. Two or three days after the vaccination of E. B., both children appear to have had influenza, followed by bronchopneumonia. Under the impression that vaccination would aggravate the disease in the rather weakly baby, I was much concerned as to the issue, knowing full well that if the vaccinated infant died I should be blamed for having vaccinated her, and vaccination would be put down as the cause of her death. The pneumonic attack lasted in both children for about twelve days, and to my great relief I observed that the vaccinated baby stood the attack better than the unvaccinated one. The symptoms were not so acute, the temperature not so high, and recovery was equally satisfactory. The vaccinal process was also affected, the vesicles not so large, the areolæ not so acutely inflamed.

"The second case was that of an infant, two months old, whose mother was anxious to have him vaccinated before he was 'shortened.' On the fifth day after vaccination he developed acute capillary bronchitis, and for a day or two the baby's condition was extremely critical; that aeration of the blood was seriously interfered with was shown by several attacks of deep lividity. I fully anticipated a fatal issue by the seventh or eighth day, assuming as I did that the vaccinal process would be then fully developed and aggravate the condition. Not so, however; by that time the pneumonic process began to show signs of improvement; the vesicles were somewhat delayed in their evolution, were small in size with a small areola. I considered that as the vaccinia matured the acute symptoms of the pneumonia subsided, and so saved my patient.

Measles and Scarlet Fever.—"Several cases of these diseases running concurrently with vaccination were observed, with no untoward results. In one well-remembered case of measles, during a particularly malignant epidemic in which almost every case developed pneumonia as a sequela, it was observed that an infant whose vaccination ran concurrently with the development of measles, escaped pneumonia and made a better recovery than the others.

Pertussis.—"Of all the acute infantile diseases, none is more liable to complicate the vaccinal process than whooping-cough, the reason being that whooping-cough lasts longer than any of the others. It is interesting to observe how, with the development of vaccinia, the paroxysms of whooping-cough disappear—not that the infant's condition becomes worse, the aspect and general state improves. Of course, in a case of whooping-cough complicated by pneumonia, much the same thing happens; I have had very recently a severe case of lobular pneumonia in a child suffering from whooping-cough, and I observed very much the same thing happening; but in both conditions when convalescence is established the paroxysms return. I have had no opportunity of observing the so-called 'cures' of whooping-cough by vaccination; nevertheless, I am satisfied that the influence of vaccination on whooping-cough is decidedly beneficial.

Influenza.—"This, too, has a moderating influence on the vaccinal process, even though it may excite, as it has done in one well-recorded case, a latent vaccinia. A baby, A. T., aged three months, was vaccinated on December 6, 1901. Three groups of scarifications were made, two of which developed to full maturity, the pocks healed and left good-sized cicatrices. The third scarification never produced any reaction. On April 26, 1902, the baby contracted influenza from its mother. On April 30 a full-sized vesicle was observed at the very spot where the unsuccessful scarification had been made. This came to maturity with a distinctly-enlarged areola; a supernumerary vesicle was observed, showing that the areola was of more than normal reaction. The cicatrix from the delayed vesicle is more depressed, but not so foveated as the first two. The mother developed broncho-pneumonia of a severe type, the baby's attack of influenza was of a mild type and left no sequela.

Congenital Syphilis.—"Four babies were vaccinated at the age of about three months who were the subjects of congenital syphilis. Of course, the utmost aseptic precautions were taken, and in three of the cases mercurial treatment in the form of hydrarg. cum creta was begun at once. It was observed that during the vaccinal process the nasopharyngeal symptoms considerably subsided with the full development of the pocks, returning to their original condition at the end of a fortnight or so. In one case, the mother observed so much improvement that she considered it unnecessary to give the powders of hydrarg. cum creta with which she had been supplied. In some cases the vesicles contained large quantities of serous fluid, and, strange to say, the surrounding areola or inflammatory reaction at the base was much smaller. The pocks were slower in their development, and took longer to scab and heal up. When the scab separated a deep, sharply-cut ulcer is left with a clean base. In at least one troublesome case dressing with antiseptic care sufficed to induce a favorable healing.

Zymotic Enteritis or Diarrhea, Tuberculosis.—Local or general.—"These are conditions which I believe to be unfavorably influenced by vaccination. The most careful and conscientious practitioner may find himself suddenly involved during the summer season in the unpleasant position of having vaccinated a baby to find that in two or three days the child has been seized by zymotic enteritis. The suddenness of the collapse often following this state of things is very distressing, and may destroy the young life before much can be done for it. Of the deaths among the vaccinated enumerated in this paper one was of this description, dying thirteen days after vaccination, and I formed the

impression from this and other cases that zymotic enteritis, contrary to the other diseases mentioned in this paper, running concurrently with vaccination, is unfavorable.

Tubercle.—"I have also on record a well-defined case, aged seven months, whom I now believe, but did not at the time, to have been the subject of incipient phthisis. The child was vaccinated at his mother's request as she had been told it would improve his condition. During the vaccinal process everything went on perfectly normally and the pocks scabbed and healed within a fortnight. But very soon thereafter the tuberculous condition became more pronounced and he died four months later. Insanitary dwellings, overcrowding and filthy habits are immensely more dangerous to the recently vaccinated than the presence of such diseases as scarlet fever, measles, whooping-cough, and influenza. In small houses with large families of dirty habits with nothing cleanly in the house that either the vaccinated or vaccinator can touch, the utmost care has to be taken so that septic matter may not enter the wound. The Act of 1898 requires that insanitary houses should be reported to the medical officer of health and the vaccination postponed. This is no doubt as it should be, but the reforming zeal of the sanitary authority may be lukewarm; the time taken in putting the house in a safe sanitary condition may be so prolonged that the child may escape vaccination altogether.

Insusceptibility.—"The Vaccination Acts have throughout acknowledged the insusceptible, but true insusceptibility must be very rare. Four factors govern it, each of them temporary; first, and most important, potency of the lymph; secondly, the health of the individual; particularly is this the case if the child be vaccinated while in the stage of incubation of any of the exanthemata; thirdly, age; very young infants are less susceptible to successful vaccination than older children; fourthly, and perhaps to a very limited extent the experience of the vaccinator. Ill-health, particularly anemia, is a very common cause of insusceptibility for a time; let anemia be corrected, and the child will soon be successfully vaccinated. I have a case on record (M. E.) three times unsuccessfully vaccinated with active, potent L.G.B. lymph in the summer of 1902. The child was blanched and anemic, and for a time thereafter treated with iron tonics; when the anemia disappeared, the child was successfully vaccinated at the first operation.

Eczema and Impetigo.—"Both these conditions bring more discredit on vaccination than any disease of which I am aware. An attack of either, however far removed, is sure to be charged by the parents to vaccination. That vaccination excites dormant eczema and impetigo I have no doubt. The two following cases will illustrate this: E. R. and F. W., both the subjects of acute eczema at a very early age, were under my treatment for this complaint, and by the exhibition of Fowler's solution and other tonics made satisfactory recoveries, the skin affection disappearing completely. Two or three months later they were both vaccinated, and to my great annoyance both developed eczema very soon afterward. A. W., vaccinated on April 22, 1902, was perfectly clear when vaccinated, and remained so until after the healing of the scabs; then impetigo appeared about the neck and groins. She inoculated herself by scratching in several places, particularly on the thighs. Infection spread to other members of the family, who were not particularly cleanly. The vesicles produced by auto-inoculation in impetigo are very difficult to distinguish from vaccinia at certain stages. They scab with an areola and leave a scar. The scar is never foveated and seldom depressed. The members of this family have a romantic recollection of how vaccination spread to them all, whereas in reality it had nothing whatever to do with it.

"Let me conclude by asking a question that has often occurred to me: Granted that acute concurrent diseases modify the vaccinal process, tone down the symptoms, and delay the evolution of the pock, does it follow that in these cases it also modifies the protection which vaccination affords?"

Security of Tenure of Office of Sanitary Officers.—Dr. Joseph Groves, of Isle of Wight, said "when Dr. Lloyd Jones, one of the secretaries of this Section, invited me to read a paper on the security of tenure of office of sanitary officers, I replied that all which could be said on the question had been said; and Dr. Garstang, in his paper read before the annual meeting of the Incorporated Society of Medical Officers of Health in October, 1899, remarked that the reader of a paper in the State Medicine Section at the Cambridge meeting of the British Medical Association in 1880 apologized for bringing before the Association a matter which had been worn almost threadbare by discussion. But the subject is of such paramount importance to the highest interests of the community, and affects so intimately the well-being of the sanitary officer and the efficiency of his work that constant reiteration, both in season and out of season, is a pressing duty.

"Now, what are the circumstances? The country is divided up into sanitary districts administered by the rural and urban district councils and the corporations of boroughs, which are nominally supervised locally by the county councils in the areas in which they are situated, inasmuch as they (the county councils) have power to make representations to the Local Government Board. This useful provision is almost wholly neglected, I may say, while the power to withhold the moiety of his salary paid by the State, if a copy of his annual report is not in the hands of the county council within six weeks of the end of the year—a power never exercised by the Local Government Board—is being made use of to castigate and annoy the medical officer of health, and to diminish his authority and weaken his power for good in the district which he serves.

"A characteristic of the present day is a lust of notoriety, and in connection with local government in the provinces we find the same men members of several administrative bodies, thus forming a kind of official councillor class, who manipulate and control to a considerable extent local affairs. This fact may account in some measure for non-interference by the county councils with the district councils and corporations in sanitary matters, and for the persecution of medical officers of health who are not subservient to the particular members of the district councils whose aim is to dominate those bodies. That such domination is possible is due to there being very little local public opinion apart from imperial party politics and religious sectarianism, and membership of provincial councils, not excluding county councils, is falling more and more into the hands of the less-educated and of those who are prompted to occupy positions which enable them to protect their personal interests. There is, too, a certain timidity, a want of courage, a shrinking from opposition among those members of public bodies who wish to do their duty to the public and to serve their wards or parishes faithfully, and this favors the domination of the individual councillor.

"As the sanitary condition of any place in a district may directly or indirectly affect the whole district, so the sanitary state of any district may directly affect the sanitary well-being of the surrounding districts, and, indirectly, of the whole country. The Local Govern-

ment Board, therefore, representing the country generally, exercises great influence and authority in every district, an influence and authority which are increasingly necessary.

"Under the law each sanitary district must have a medical officer of health and one or more sanitary inspectors. The local authority selects these officers, and they cannot be appointed without the sanction of the Local Government Board, excepting in those rare cases in which the whole of their salaries are paid out of the local rates. As soon as they are appointed they receive from the Local Government Board—not from the local authority—their orders. These are very definite. The Public Health Act requires the medical officer of health to write a report annually on the health of his district, and the Local Government Board's orders direct him as to this report. In it, he is told, he is to describe everything which in his opinion either in the present or the future does or may, either directly or indirectly, affect the interests of the public health. He has no choice—even when obedience involves criticism of the acts and methods of administration of his authority, which it often does. He is ordered to direct the inspector in his work, and the inspector is ordered to look to him for direction in his duties, subject to the superior authority of the sanitary authority. The relative positions of the medical officer of health and the sanitary inspector are thus accurately defined—the medical officer of health is the responsible head of the sanitary administration, and the sanitary inspector is his eye and hand so to speak.

"The terms of appointment of the sanitary officer are peculiar and most exceptional. Ordinarily in the public service, and even in private life, a man is engaged not for a definite term, unless for temporary work, but for so long as he is competent for his duties, or, as it is phrased, during good behavior. In this manner Poor-law officers of every degree are appointed, and they cannot be dismissed from office without the sanction of the Local Government Board. But outside London and Scotland the sanitary officer is appointed for a definite term—the sanitary inspector for a year, the medical officer of health with few exceptions for one, two, three, or five years. At the end of the term his appointment ceases, and the sanitary authority may proceed to select another to fill the post, and the Local Government Board, almost as a matter of course, will confirm their choice. The Board will not permit an appointment to be made without its sanction, but that having been given the Board is no longer interested in the officer; it demands only that it shall sanction the appointment of his successor. He has been dropped probably for obeying the orders of the Board, which he must obey, but that does not matter, and he has no redress whatever.

"It is evident from extracts from *Hansard* for 1872 made by Dr. Woodford that this extraordinary anomaly was not contemplated by the Legislature, whose intention it evidently was that after the first appointments, the appointments in the public health service should be permanent. Sir Michael Hicks-Beach said, in Committee on the 1872 Bill, that 'a five-years' officer, like an American President, would be afraid of displeasing those on whom his re-election depended.' And it is the opinion of Mr. Alexander MacMorran, the legal expert on the laws which regulate local government, that the Public Health Act, 1875, Section 191, provides for granting fixity of tenure. He says: 'The Local Government Board have power in cases of medical officers of health of urban and rural districts to grant fixity of tenure,' and he adds, 'it is obvious that great hardships might result from the refusal of the district council to reappoint an officer whose term had expired.'

"It is common knowledge that such great hardships have resulted in a large number of cases both to medical officers of health and sanitary inspectors from the refusal of district councils to reappoint them. Dr. Garstang, himself a victim, quoted 35 cases of medical officers of health which had come actually under his own notice who had so suffered, and these, of course, form only a small proportion of the total number. For the most part reappointment was refused because the officer had obeyed the orders of the Local Government Board; but there was one case in which the medical officer of health was also Poor-law medical officer. In performing his duties as parish doctor he had given offence, and as he could not be dismissed from his position without the consent of the Local Government Board his employers punished him by depriving him of his public health appointment.

"The extent to which this insecurity of tenure of office of the sanitary officer militates against the interests of the community and prejudices the greatest asset which the nation possesses, only the sanitary officer knows. The fear that he may not be reappointed at the end of his term of office constantly haunts him, and however much he may strive to lose sight of it, and however strenuously he may determine, whatever the consequences may be to himself, to act as a high-minded honorable gentleman, still the fact remains that moving bodies travel along the lines of least resistance, and, human nature being what it is, there is necessarily a desire to avoid friction with those placed in authority over you, and a man of generous mind makes undue allowance, perhaps, for ignorance and prejudice. He gets to feel he is the Ishmael of the twentieth century. He has offended so many people by doing his duty he is certain he will not be reappointed, and he asks himself to what good is it all. Well, I may be wrong, but it seems to me as a man of the world that the effect, and more particularly with certain temperaments, must be deterrent. Under such conditions the best possible is not obtained by the community from the sanitary officer.

"On March 8, 1895, Sir Walter Foster, the then Parliamentary Secretary of the Local Government Board, addressed a deputation in the following terms: 'The Board has arrived at a rather important decision, namely, that we consider these appointments for short periods and precarious tenure injurious to the public health. We are at one with you that men holding appointments for very limited periods cannot be expected to discharge their duties in that fearless and thorough manner which those duties require for the safety of the public, and we are anxious to encourage local authorities to give up the system of short appointments. We recognize that these offices are very delicate and difficult, as well as exceedingly responsible, and while a man is elected from year to year by a sanitary authority who may be offended by his zeal for the public health, we feel he cannot discharge his duties in the way they ought to be discharged.'

"In this utterance the Secretary of the Local Government Board—himself a medical man—eight years ago stated that it was the deliberate opinion, not of himself alone but of the Local Government Board, that precarious tenure of office was injurious to the public health, and in this opinion every person who is familiar with the question will agree. And, although the case for security of tenure of office may be permitted to rest here—for it could not be made stronger—it is but natural the sanitary officer should view the matter from his particular standpoint, for it is he who fully realizes that, as Sir Walter Foster puts it, in the discharge of duties which are very delicate and difficult as well as

exceedingly responsible, in that fearless and thorough manner which those duties require for the safety of the public, he suffers disability of a nature the like of which is unknown to any other person engaged in the public service. As Dr. Francis Vacher forcibly expressed it: 'The medical officer of health is an officer appointed *inter alia* to detect and expose the knavery of builders, to tax the rapacity of landlords, to seize and carry off the tainted goods of shopkeepers: yet these builders, landlords, and shopkeepers have absolute power over him, to strip the coat from his back and take the bread from his mouth.'

"But it is not simply that he may lose his office at the end of the term for which he was appointed, and thereby be called upon to suffer great hardships, but he has frequently to endure insult and persecution. He may be publicly disparaged and belittled and humbled and thwarted in his work, the object being to force him to resign or to bring about his non-election at the end of his term; and, if he be a strong man, he may be constantly threatened with dismissal from his post—a threat to which effect would be given much oftener but for the fear that it might be resented by the people.

"That a class of public servants who are doing a great and beneficent work, the value of which to the nation is admittedly incalculable, and for which they receive, speaking generally, altogether inadequate pecuniary remuneration, should be permitted to pursue that work under conditions which are inimical to it, and that they should be allowed to be penalized and persecuted, and to suffer hardships and indignities because they do their best to fulfil their obligations and obey the law, passes comprehension.

"Why is it? Undoubtedly the Local Government Board and the Government of the day are primarily responsible, but it is difficult to arrive at the considerations which influence the permanent officials. Since 1895, when Sir Walter Foster gave expression to the views of the Board, which were very much in agreement with those of the health officer, its President has steadily declined to receive any deputation on the subject, and it is only from opinions expressed by individuals from time to time that any idea can be formed.

"Another reason I have heard advanced is that sanitary officers would not do their work so well if the tenure of their offices were secure. This would be a valid argument were it true, but some medical officers of health hold permanent appointments, and no one can say they are worked less efficiently on that account; indeed, the effect must be the very opposite. The Poor-law officers of every degree are not less efficient because they cannot be dismissed without the consent of the Local Government Board.

"I have been told that it is in the minds of some of the permanent staff of the Local Government Board that in the course of evolution of the public-health service great changes may be made, such as have taken place in Scotland, and that, if the appointment of the sanitary officers were permanent, they would have to be compensated for loss of office. One can only hope as a citizen of a wealthy kingdom, which claims to be in the van of civilization, it is not true. It would be contemptible in the extreme if, after the sanitary districts were got into good order, the men who had done the work at so much cost to themselves should be simply sent about their business.

"But whatever the cause or the combination of causes which permit the continuation of an anomaly which occasions serious detriment to the interests of the public health, and is a gross injustice to the sanitary officer, I believe the medical officers of health have the wholehearted sympathy of those of our profession who understand the question. That we have the very practical sympathy of the British Medical Association—the great representative body of the profession—is certain, for they are doing all they know, by promoting a Bill in Parliament at some expense, and by seeking an interview with the President of the Local Government Board. During the preparation of this Bill it was a graceful act of the Incorporated Society of Medical Officers of Health to request the Council of the British Medical Association to include the sanitary inspectors in its provisions. In my opinion it was right and just, for the sanitary inspectors have suffered as we have done, often because they were loyal to their orders and to us; and it has its advantages to them and to us, for it has united our forces by the withdrawal of their Bill.

"That the Bill will pass into law is not probable without the assistance of the Government, and that assistance is not likely to be rendered without the sanction of the permanent officials of the Local Government Board. In the meantime, by the kindness of our good friend, Sir Francis Powell, and of those who assist him by backing the Bill, we are keeping before the public the injury inflicted upon the public health and the disabilities of the sanitary officer.

"We of the British Medical Association have no choice as good citizens but to continue the agitation by pressing the subject upon the attention of members of Parliament in our respective districts, and upon all those who take interest in public affairs or who can influence public opinion. And in time I have no doubt, if we are true to our responsibilities, we shall succeed in removing not only a burden from our own shoulders, but a menace to the highest interests of our neighbors and that which is a great and serious reproach to England."

The Appointment of a Minister of Public Health.—Dr. Frank G. Bushnell, of Plymouth, said "Members of the medical profession including many medical officers of health, the British and Canadian Medical Associations in council, the Sanitary Institute of Public Health, the Manchester and Salford Sanitary Association, the Imperial Vaccination League, the County Council West Riding of Yorkshire, the Institute of Sanitary Engineers, the Workmen's National Housing Association, the Childhood Society, members of Parliament and Medical Societies have considered and expressed approval of the appointment of a Minister of Public Health.

"Such a Minister would act as a leader. The value of a leader is exemplified in science, statecraft, religion, war, commerce, and indeed in every sphere of human activity. The individual leads the way, others follow in his footsteps; for example, Kaiser Wilhelm, M. Pasteur, Lord Lister, Mr. Joseph Chamberlain, 'General' Booth. The importance of the individual and human factor is brought home in Napoleon's famous saying, 'Men are nothing, the man is everything.'

"We have illustrations of the abolition of disease consequent on the adoption of measures suggested by preventive medicine. With the appointment of a Minister this may be expected to occur more and more. For example: The abolition of smallpox in Germany; the abolition of rabies in England; the diminution of sepsis by 'Listerism;' the disappearance of leprosy with improved sanitation. Such are mere reminiscences of the possibilities of preventive medicine in the abolition of disease.

"Zymotic and tuberculous diseases are recognized as largely preventable. The Sixty-second Report of the Registrar-General of the United Kingdom for 1899 gives the deaths from zymotic diseases as 89,235, or 2,811 per million of population. Tuberculous diseases

destroyed 60,659, or 10.4 per cent. of deaths from all causes, 1,911 per million of the total population thus arose. Alcoholism caused the death of 2,871, or 112 per million living among males and 70 among females. Cancer and malignant disease destroyed 26,325 persons, or 829 per million of all ages and both sexes. As to the infant mortality, 163 infants under one year of age died in 1899 in every 1,000 of the population in England and Wales. It has increased from 149 in 1871-80, and this implies heavier incidence of disease in infants, with ill-effects in after-life. There were 82,103 deaths in lunatic and idiot asylums, or 14.1 per cent. of the total deaths in England and Wales.

"It is hoped that such a list of mortality figures will set men thinking. It cannot be accepted from any point of view as the ideal of the art of citizen making. Without being convinced that the national physique is degenerating, as has been argued from the reports of the Inspector-General of Recruiting—from the decline in the birth-rate, from the increase in the death-rate of infants under 1 year old, and from statements made by members of the Royal Commission on Physical Condition in Scotch Schools, yet the most optimistic of us must be impressed with the fact that the health and physique of other countries is said to be markedly improving.

"It is claimed by those skilled in vital statistics that one-third of the deaths annually registered are dependent on causes which proper administration of sanitary measures could remove. It is said that the appointment of another Minister would lessen the individual weight of those that exist. The withdrawal of highly specialized duties from overworked departmental heads cannot be construed into a loss of prestige. It is merely a development in the natural order of affairs. The superintendence of the health of millions cannot be practicable in addition to other vast and onerous duties.

"Just as—or even more so than—a municipality and county appoints its medical officer, so should the nation. It cannot expect to be served for ever by other officers, however able and strenuous they are.

"Again, it is said that the effective discharge of public health regulations must eventually devolve on local authorities. True, but a Minister would act as the best incentive to proper sanitary progress by many. A superfluity of Ministers is said to exist already. Surely if many have been found good and necessary in the past, we must rely on our experience and appoint another, if indicated.

"Again, I am asked if existing arrangements are really sufficient. To this I would answer by a question, Are the preventable diseases diminishing as instinct and science tell us they might? Do medical officers of health of districts of schools or of troops believe that the interests of health are thoroughly guarded? As for a Minister restraining progress, I am sure in the long run the gain to the interests of health by a leader, especially a trained one, would far outbalance 'official' tendencies in its narrow sense. Further, looking back on those who have guided us in other matters in the past, can we say from a broad basis of judgment that we should have been better without their services?

"It is thought by some that the formation of a ministry would detach sanitary administration from other departments of local government and cause friction with the Local Government Office. However, the appointment of a Minister of Education has, curiously enough, been coincident with the actual unification of education and local government. It may be concluded that it is possible for a Ministry of Health and Local Government Office to cooperate harmoniously, the more so perhaps when we remember that the administration of the public health is combined and included in other countries in State offices of Agriculture, Navy, Education, and Police.

The question of expense is met to a certain extent by the fact that in a new Health Ministry certain officials are already existent but scattered among many departments; and also that saving of money results from prevention of disease, and in any case cannot be judged from the point of view of £ s. d. The mover of a resolution in favor of a Ministry of Commerce at the recent annual meeting of the Associated Chambers of Commerce, gave it as his opinion that commerce is the foundation not only of the prosperity of the people but of the empire itself. Another speaker said that it was obvious that commerce was its very life. This is indeed an erroneous view. What position would this country have held without its vigorous health, its bodily mental and moral 'grit' in the past? Lord Beaconsfield went so far as to say that 'the health of the people is really the foundation upon which all their happiness and all their power as a nation depend . . . but if the population of that country is stationary, or yearly diminishes in stature and strength, that country is ultimately doomed.' What does Ruskin say? 'There is no wealth but life.'

"The apathetic who expect the world to stand still in its course and present arrangements to suffice must remember that there are numbers who exist under conditions of 'sanitary injustice' at present, and without a leader they are helpless.

"In the Minister many would see the embodiment of a principle the importance of which is absolute but unrecognized frequently. It is that, whatever the demands of complicated modern life make upon us, whether in crowded communities or rural districts, on land and on sea, in this country or in our great tropical colonies, the natural or physiological laws of health must be obeyed or exact their toll inevitably. The Minister would regulate the balance between the forces of Nature and civilization. The Minister would add weight to the recommendations of local sanitary authorities, would assist those in need of help, would stimulate the apathetic, and would remove such limitations as unduly bound others, would be compelling to those who wilfully neglect their duty. Unnecessary interference would be avoided. The guiding light which would steer the Government barque between the rocks of neglect and interference would be the health requirements of the people based on scientific medicine.

"The value of the work done by voluntary effort in this country is, and will be, enormous. This is right. It is said that every great sanitary improvement has been initiated by voluntary or local action, and this is truth.

"The Local Government Board was established in 1871 to concentrate in one department of the Government the supervision of the laws relating to the public health, and the relief of the poor and local government. Its constitution is probably familiar to you, and it may be remembered that it originated partly on the recommendation of the Royal Sanitary Commission (1869-71), who expressed the opinion that, if such a Ministry were established, separate secretariates—one for public health and one for the relief of the poor, would be found necessary. This was not carried out, however, but all administration was concentrated in the hands of one secretariat, and was in fact a continuance of the former Poor-law Office.

"The Royal Commissioners had expressed or implied that the new authority would be a 'motive power' of no mean degree for promoting sanitary progress. It is impossible to avoid a comparison of such a stimulating

plan of action with the policy of the Board in 1888, when it desired to transfer to county councils all the powers which it now has under the Public Health Act of enforcing on defaulting district authorities the performance of their sanitary duties. In 1903 there are yet more county councils without than those with medical officers of health, I learn. It was obviously a premature effort at decentralization. The powers and duties of the Board are those of the Poor-law Board with those of the Privy Council. All the powers and duties of the Home Office in relation to public health, drainage and sanitary measures, local government, local returns, and local taxation. The growth of its duties is steady and continuous. It has legislative powers of making rules, regulations, and orders, and confirming by-laws. Its administrative control varies considerably; over Poor-law matters it is complete; over municipalities the Board has no direct control. Over sanitary authorities that Board has considerable power; it can force them to carry out sanitary measures to its satisfaction. Other powers have been conferred upon it, and it has certain obligations. In 1888 it received the central control of the county councils, an omen of future expansion as the tide sets in towards local government *pari passu*.

"The expanded Medical Department of the Board, the General Register Office, and officers from other departments would well form a basis of the Ministry. Associated with it should be a consulting body of representative or eminent members of the medical profession, for example, the Presidents of the Royal Colleges, a medical officer of health of schools, of factories, of Poor-law patients, prisons, navy and army. A veterinary surgeon, statisticians as the registrar-generals, an alienist, a pathologist, a sanitary engineer, and architect would be most suitable consultants.

"Education would be the most powerful engine that a Minister could exert in developing that 'health conscience,' which is desired in Scotland. The present system is too slow a process in this country, and the most effective way to protect the interests of the general public is to create a strong central department with effective control of local departments. It appears that local authorities when combined overawe even Parliament itself, and Parliament must be supreme.

"In a few words, the Ministry would deal with the records of disease, vaccination and revaccination, with outbreaks of epidemics and infectious sickness, with the regulation of injurious trades and industries in relation to health, with the prevention of filth, and with the infant mortality. Hospitals of all kinds, open spaces, gymnasia, swimming baths would all be advised upon; attention would be drawn to deficiencies; the adulteration of food and drugs, analysis of water, etc., would be dealt with; diseases communicable from animals to man, chemical and pathological research as to the causation and prevention of disease of mind and body at home and in our colonies; bacteriological investigations of human and animal morbid conditions, etc., would be supervised.

"Education in hygiene would be studied and inculcated as of paramount importance. The returns of the coroners' courts and meteorological observations would be collected. The Home Office might see fit to part with the supervision of the health of workers, prisoners, police, and lunatics.

"The Veterinary Department of the Privy Council would well be associated with the Ministry. The Minister would perhaps serve the interest of the public health best if he were not liable to change with every Government. He would be an adviser rather than a participator in the fierce and often unnecessary party strife of politics. Indeed, he might be definitely cut off from the collective responsibility of the Cabinet and be only summoned to the meetings of the Cabinet which had to do with his department. It is in the power of the Sovereign to summon any privy councillor to any Cabinet for any particular purpose and there is no obvious reason why such a course should not be adopted in this case.

"In conclusion, I may say that a list of eminent men could be given who advocate the creation of a Ministry of Health. It is difficult, with the present figures at my disposal from other countries, to compare satisfactorily the various National Health Departments, but I may say that Canada and the United States are moving toward such a separate office; Germany, France, and Italy may be said to have already compulsory physical education in their systems of military training.

"If I can arrest the attention of this meeting on the central idea of the necessity for Ministers of Public Health presiding over a national organization I am well content. I beg to move 'That this meeting is of the firm opinion that a Minister of Public Health would possess great potentialities for improving the national health, and would eventually benefit it largely. It is further of the opinion that the Council of the British Medical Association should advise that a Government inquiry be made into the advisability of uniting the public health work of various departments into one Ministry under the control of a Cabinet Minister.'"

Mr. Herbert Jones, of Hereford, sympathized with the object which Dr. Bushnell had in view, but maintained that there was already a Minister of Public Health in the President of the Local Government Board. A fatal flaw in Dr. Bushnell's proposal lay in his suggestion that the Minister of Public Health should hold office irrespective of change of Government. The discussion of the subject was opportune in view of the probable introduction within a short time of a Public Health Bill for England and Wales.

Mr. H. H. Tidswell, of Chester, said that in the interests of public health he would like to see increased powers given to medical officers of health for the purpose of daily inspection of houses in every town, with the view of preventing the spread of infectious diseases and for the purpose of warning those parents who persistently neglected the health of their children. To carry out this system the medical officer of health should have the power to appoint the general practitioners of different districts to carry out this work, and to pay them according to the work done. It was desirable to make the experience and knowledge of the general practitioner available for the public health service, but not gratuitously as it was at present.

Dr. Joseph Groves, of Isle of Wight, said the difficulty was that the Treasury did not grant the Local Government Board sufficient funds to enable it to employ more assistance, and consequently there was always a block of work. The medical department was only one of the departments of the Local Government Board, and it would appear that the reports of this department were considered by the permanent secretaries, with the assistance of the medical officer if considered necessary. He believed that at the moment the greatest amount of good to the public health would be found in security of tenure of office to sanitary officers.

Mr. H. D'Arcy Ellis, of Stourbridge, did not see what advantage was to be gained by the appointment of a Minister of Public Health. He believed he had the honor of being the first medical officer of health who obtained security of tenure. He did not know that the security which he now had made any difference to the good relations existing between himself and the local council; but he did feel that more backing up was required, somewhat on the lines on which he believed the

Factory Department was now administered under Dr. Whitelegge, and carried out under the medical inspection of Dr. Legge. As to educating public opinion, he believed that the public were becoming much more alive to the necessity of good sanitary administration, and there was growing up a healthy public opinion which would bear good fruit; he was quite sure that in his own district much more interest was being taken in sanitary questions. Of course, his reports did sometimes bring him and his council to close quarters, especially when inquiries were made from the central department, but these matters were always adjusted by the usual stereotyped reply, and did not always end as satisfactorily as the medical officer of health might desire.

Physical Degeneration in Children of the Working Classes: An Inquiry Into Its Causes and Suggestions for Its Remedy.—Prof. Herbert H. Tidswell, of Chester, asked "What is meant by physical degeneration? It denotes a condition of mind and body below the normal standard of development—deficient in vigor, activity, and endurance. The object of my paper is to draw attention to certain psychological influences which to my mind are responsible for the nervous restlessness and waywardness so characteristic of the children attending the schools under the Education Act. It is not my intention to dwell on such well-known factors of disease as starvation, exposure to cold, improper feeding, want of rest, want of fresh air and sunshine, and insanitary dwellings. I think no one will deny that the standard of health among school children in our large towns is lower than it ought to be. I will not be so rash as to assert that it is lower than it used to be; but it certainly is not so high as it ought to be, considering the advances in all departments of sanitary legislation and the improvements in hospitals and dispensaries for the free treatment of the poor. It is evident to my mind, as the result of my investigations, that there is some factor having a bad influence on the health of children which did not exist before the new system of education came in force. The children of the working classes of the present day commence school attendance too young. The period of school attendance is much longer and the course of studies much harder than it was under the old system. The rules of the new system put burdens on the teachers and pupils not easy to be borne with equanimity, while the system of cram is turning children into talking machines and injuring their reasoning powers.

"These are powerful factors in producing cerebral congestion. The mind of a child is remarkably sensitive. Harshness and severity, either on the part of a teacher or parent, will destroy the happiness of a child's life, disturb the appetite and digestion, and drive away sleep. A child's anxiety to please a parent or teacher, if unsuccessful or not appreciated, will have the same effect. I know from personal experience that fear may have a paralyzing effect on the mental faculties. In my early school days I had a severe master; one day he flew into a temper, and threatened to cane me because I was slow at mental arithmetic. My difficulty was to add 8 and 1 together, but so long as he stood in front of me with his cane I was too frightened to utter a word. I have seen several cases of chorea occur in girls as the result of school worry. It is my opinion that many cases of hysteria and other nervous maladies in young women of ovarian and uterine origin may be traced to over mental strain during school life.

"To return to children. It is an axiom that the physiognomy is a certain index of the state of the feelings, for example, when a child is happy and content, his face will show his state of mind. When he is irritable, tired, or overworked, the child's face will bear a pained, weary, haggard, or careworn expression. It is natural to assume that boys and girls are usually glad when lessons are over and they can go and play or return home for dinner.

"I have often stood still outside schools to note the expressions of children coming out of school. A few only had a look of joy and happiness. The majority had a sad, careworn, haggard look, suggestive of mental strain. The behavior of some was so unnatural as to lead me to suppose their brains were highly irritable. I saw one boy take his overcoat, fold it up, and then kick it along the pavement. Did this indicate a healthy state of mind? When I was called upon to treat delicate or nervous children I invariably ordered rest from school for several months which was usually followed by improvement.

"Parents have frequently complained of the severity of the school regulations and occasionally of the severity of the teachers. Children's brains are delicate organs and require gentler treatment than they often receive at the hands of their teachers. The cram system of the present day is both demoralizing and degrading and is calculated to render the judgment unstable and capricious and to interfere seriously with the mental equilibrium. The development of the body is seriously retarded by a morbid condition of the cerebrospinal system. In some schools it is customary to punish children who are late for school by a stroke of the cane on the palm of the hand. I have never seen this punishment inflicted, but I imagine it is greatly dreaded as children take great pains to be in time. I think corporal punishment should be absolutely forbidden in school.

"In some towns parents have difficulty in getting permission from the teachers for their children to remain at home in cases of sudden illness; many parents are unable to afford a doctor's fee, and hence cannot obtain a medical certificate. They are often afraid to allow a child to remain at home when ill. I recently met with a sad case of this nature. A poor woman in charge of a little grandson kept him at home from school for a day or two, as he had a violent cough and was very ill. The school attendance officer called and inquired why the boy had not been to school. He was told the reason, but did not think it satisfactory, so he gave strict orders for the boy to return to school. The boy was too frightened to disobey, and went to school, but almost fainted in the effort of getting there, while his cough disturbed the whole class. As his illness became worse the grandmother got alarmed and sent for me. I went to the house at once, and found the boy very ill in advanced consumption; he was treated with the greatest care, but he got gradually worse, and death terminated his sufferings in the course of a few weeks. In another case a boy was attending school for a week while suffering from scarlet fever.

"I think I have said enough to prove that the medical aspect of our system of national education is far from perfect, and that it is probably a powerful factor among others in the lowering of the standard of national physique—mental and bodily. Few men have the same opportunities as general practitioners of studying child life under the Education Act; they alone and the parents can trace the connection between mental strain, nervous instability, and disease.

Suggestions for a Remedy.—(1) "If possible remove the cause of mental strain and abolish the cram system. (2) Let all schools be under systematic medical inspection, let a medical officer be attached to each school, who shall inspect each class as it assembles to detect infectious or other diseases in the early stage, who shall examine the eyesight, the hearing, and general condition of each child and keep a report of the same,

who shall visit any pupil at home in case of sudden illness and give certificate to same. A measure of this kind would entail cost, but in the end it would be true economy, it would save a vast amount of suffering and ill-health, and would help to raise the standard of national health.

"In conclusion, it may not be amiss to point out that the object of education, before the introduction of the Education Act, was to train boys and girls for their duties in that station of life to which it had pleased God to call them. Whether that is the object under the present system is a question I will not presume to answer. My last words are an earnest appeal to parents. Remember the words of our great poet, Lord Tennyson, 'Self-reverence, self-knowledge, self-control. These three alone, lead life to sovereign power.' Teach your children this lesson, and they will bless you in after-years."

Dr. Dawson Williams thought that "some definition of terms was needed. What was meant by the term 'physical degeneration?' Did it mean a progressive degeneration of the race? If so, there was not, so far as he was aware, any statistical evidence that the amount and degree of degeneration in the population was increasing. Theoretically, the proposition involved the assumption that acquired characteristics could be transmitted, and those who accepted the doctrine of Weismann would find great difficulty in accepting that assumption. The practical question appeared to be whether the factors which tended to prevent adequate physical development could be removed? Whether these factors were more operative at the present time than fifty years ago might be an interesting question from the historical point of view. He hoped that the inquiry into the causes of the defective physical development which existed in many populous districts would not be mixed up with the question of the causes of tne decline in the birth-rate. The two matters were distinct. The steps to be taken to safeguard life from the time of conception formed a field of work sufficiently wide, and attention should be given to safeguarding the health of the mother during pregnancy. The food supply of the poorer classes in populous districts differed from the supply thirty or forty years ago in respect particularly of the large increase in the use of preserved foods. Whether the use of starchy foods for infants had increased or not it was undoubtedly excessive, and the condition in which milk reached the infants of the poorer classes was another factor which deserved remedy. He believed that the defects in the diet of infancy and youth caused a condition of defective nutrition which produced not only imperfect physical development, but imperfect or retarded cerebral development, which was the cause of what was called over-pressure."

Mr. J. M. Mackenzie, of Kirkby-in-Ashfield, believed that physical degeneration was both acquired and transmitted. School children who left school very healthy soon degenerated when occupied in unhealthy employment. Physical training was greatly needed. Children's homes should be improved, and they should have more recreation and better food. The marriage system must also be looked to. People were allowed to marry who would always produce a stunted and degenerate race.

Dr. John Strachan, of Dollar, referred to the great need of medical guidance in the matter of school procedure, holding that it should be the duty of the profession to safeguard the children in regard to the conditions of health of which schoolmasters were not required to have any knowledge. He thought that long confinement in school and at school work, amounting often to eight or nine hours of sedentary work, had a great tendency to deterioration of the physical condition and tendency to disease; and that the effect upon the nervous system of punishment and other terrorisms imposed upon children in connection with school lessons interfered with sleep and tended to injure the mind.

(To be Continued.)

BOOK REVIEWS.

THE MEDICAL AND SURGICAL USES OF ELECTRICITY, Including the X-Ray, Finsen Light, Vibratory Therapeutics, and High-frequency Currents. By A. D. ROCKWELL, A.M., M.D. New Edition. E. B. Treat & Co., New York.

THE classical work of Beard and Rockwell appears in an entirely new and modern form in this new edition of Rockwell's, and to it are added a number of the modern applications of physical therapeutic measures.

The work has been received by the profession as one of the oldest and best, and we can add but little to former opinions expressed in the NEWS.

The present edition brings the subject of the medical uses of electricity thoroughly to date.

FELIX. A novel. By ROBERT HITCHENS. Frederick A. Stokes Co., New York.

THIS is a fascinating tale of a phase of English life in which the development of a young boy of eighteen years of age is told with more than usual brilliancy and greater graphic truth than is usual in works of this type. But that is not the main feature of the book that renders it of absorbing interest to the physician. It is, in addition, a most thorough and careful study of morphinism as found in two women. The description, while in certain regards slightly overdrawn, is so well done that we venture to say that there is no work of fiction that deals with this question so well and thoroughly as this.

As a novel the work is absorbing, almost fascinating. As a study of the morphine habit it is entitled to scientific praise, and we recommend it to our readers most cordially.

THE AUTOBIOGRAPHY OF A THIEF. Recorded by HUTCHINS HAPGOOD, author of Spirit of the Ghetto, etc. Fox, Duffield & Co., New York.

ACCURATE studies in criminology have heretofore been more conspicuous by their absence than by their presence in English literature. Josiah Flynt has happily laid the foundation of a sound literary handling in this field and many imitators have commenced to follow in his train. The present volume, however, should not be considered in the light of an imitation. It is, we believe, a truthful account of an ex-convict's life. A convict who, having been trained along other lines, might have been a useful citizen. As it was, he became successively a pickpocket, a porch climber, a robber, and a professional thief, who spent more than one-half of his life in prison. Apart from certain minor anachronisms the story is well told. The vernacular is carefully reproduced and the human side of the thief's life are brought out in an eminently sane and competent manner.

While it is too early to prophesy the reform of many of the characters of the under world, it is essential that as students of criminology we should carefully collect our facts and not attempt systems of reform or punishment on the metaphysical hypotheses that have heretofore characterized much of our so-called knowledge of criminal characters.

We cordially commend this work to all those interested in the study of this type of individuals.